

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. XL.

SATURDAY, MARCH 4, 1882.

No. 9.

ORIGINAL LECTURES.

PURULENT OPHTHALMIA.

A Clinical Lecture, Delivered January 24, 1882.

BY OREN D. POMEROY, M.D.,

SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL.

GENTLEMEN: The disease of which I am going to speak to-day is ordinarily called purulent ophthalmia. Some authors speak of it as blennorrhœa, others as Egyptian ophthalmia, others again as military ophthalmia, and sometimes it is spoken of under the name of pyorrhœa, which name is used to designate the disease when pus is a more important constituent in the discharge than in the less dangerous varieties. It is of the same nature as catarrhal ophthalmia, it being a matter only of difference in degree between the mildest form of catarrhal conjunctivitis, and the most destructive form of blennorrhœa, or purulent ophthalmia. The disease is called purulent ophthalmia because one of its characteristic symptoms is the discharge of a considerable quantity of pus from the conjunctiva. It is one of the most dangerous diseases which affect the eye. This is owing principally to its liability to involve the corneal tissue, although it may be primarily a simple conjunctivitis. This disease differs from ordinary conjunctivitis in the fact that the ocular conjunctiva is more likely to be inflamed, and that to a greater degree than in any other form of the disease.

This affection may commence as a mild catarrhal conjunctivitis with a discharge that may be only serous, or sero-mucous, or it may contain a small quantity of pus at the outset. It is likely to develop and reach its acme in two or three days, progressing to this point much more rapidly than any other form of eye disease except diphtheritic conjunctivitis or perhaps acute glaucoma.

In one, two, or three days, the secretion will change from a thin serous, or sero-mucous, possibly containing a little pus, to the purulent form, when it shows all its characteristics. The amount of pus secreted is sometimes enormous. The redness of the conjunctiva will be much greater at the beginning than at this stage. The discharge in many cases is very much less in quantity in the early stage than afterwards. The conjunctiva may be intensely red, apparently almost dry and shining. This stage is exactly opposite to a later condition, where there is paleness of the conjunctiva, excessive discharge, and great relaxation of the parts. Photophobia and pain may or may not accompany the early stages of the disease, and is usually considered indicative of corneal complications. If there is no photophobia or pain, it has generally been considered that the cornea is free from disease. When the disease is fully developed, the discharge increases in amount, and becomes almost purulent. Do not always look for the appearance of pure pus, for if pus be mixed with tears, the latter will dissolve it in some measure, producing an appearance somewhat resembling the whey of milk, or as though oil and water had been mixed.

After two or three days, rarely in one day, the eyelids become exceedingly swollen, and they may be very red, shining, tense, and puffed out enormously; the swelling being largely a serous infiltration of the subcutaneous connective tissue. The swollen lid will naturally pit upon pressure, and thus become thinner.

It enlarges in every direction, so that the upper lid will be pushed down over the lower one, overlapping it like a curtain. The lid will be so stiffened by exudation, that it will often be impossible to evert it. The conjunctival mucous membrane will exhibit the more characteristic qualities in a bad case of purulent ophthalmia. It will be enormously swollen, especially if it be the seat of true chemosis. The exudation may be of a lymphoid character. This being the case, the conjunctiva will not be as red as before, it will have a brawny appearance, and the cornea will only be visible as a cup-like depression. The retrotarsal fold will be pushed forward, and give rise to a tendency to eversion, especially of the lower lids, but sometimes also of the upper. Matters will go on in this manner for some days. The milder the case, the sooner changes for the better take place; the severer the case, the later. The signs of resolution naturally would be the diminution of swelling in the lids, subsidence of the discharge, and gradual disappearance of its purulent quality. If the swelling of the ocular conjunctiva continues for a few days, you will find, very likely, that the nutrition of the cornea is being interfered with. The first sign of this is a loss of epithelium here and there, giving the appearance of roughness to the cornea. What would be worse than this would be a little milky appearance, or slight opacity of the cornea extending in all directions, like glass that had been breathed upon. This opacity, after a little time, will result in ulcers, or, as Stelwag has said, herpetic efflorescences. This process may extend so as to involve a large portion of the cornea, and result in a complete slough; or, it may extend deeply into the cornea, perforating it, causing evacuation of aqueous, and the production of anterior synechia. This will sometimes have the appearance of a fly's head, when it receives the name of myocephalon.

The duration of the disease varies according to its severity and the constitutional peculiarities of the patient. From three to six weeks may be set down as the average. It frequently changes after a few weeks to the chronic form, when, as granular conjunctiva, either with or without the trachomatous condition, it may go on somewhat indefinitely.

The causes of this disease are the same as those of simple catarrhal ophthalmia. In the case which you have just seen down-stairs the cause was the blowing of cold air against the eye. Violent changes in temperature may produce it. If the perspiration be suddenly checked by the application of cold, the eye is likely to be involved. However, these cases are more likely to occur in warm weather. We have what are called epidemics of this disease, and they are more likely to prevail in warm weather; why they do so, I cannot tell. This disease has been called military ophthalmia, because, many times, when soldiers have been confined in barracks, and have been called out from a hot room to do duty on a cold morning, they have suffered from it. It is also called Egyptian ophthalmia, from its being produced by the reflection of light and heat from the hot sand, as well as the fact that the sand is blown into the eyes. Another cause is direct contact with a patient having the disease. If you take a little pus from an affected eye, and introduce it into that of a healthy one, it may give rise to an equally severe form of the disease, or to a milder form. This question is a little complex. At the New York Foundling Asylum I ob-

served that the same causes there would produce a mild case of catarrhal ophthalmia, and also an intense purulent ophthalmia, as well as acute trachoma, or almost any other disease of the conjunctiva. Pus, from a case of purulent ophthalmia, may produce a mild catarrhal ophthalmia, hence we must conclude that there is some peculiarity in the constitutional predisposition as an explanation of the fact. If patients are in a bad condition when poisoned, they are much more likely to be attacked by a dangerous form of inflammation. The element of struma, which you can put down as insufficient vitality and malnutrition, comes in to modify the effect of the disease. These, then, are the principal causes of purulent ophthalmia. There is, however, one other cause, that of diphtheria; for, after the diphtheritic membrane has been thrown off, the case may develop into one of purulent ophthalmia, and, in that sense, it may be considered as one of its causes.

The *diagnosis* of purulent ophthalmia is not difficult. The difference between this and other forms, you will remember, is, that a considerable amount of pus is found with this disease, while in the other forms there is little or no pus. In catarrhal conjunctivitis the discharge is mainly mucous; in purulent ophthalmia, it is more purulent. In the latter disease the discharge will sometimes cover the lid with a thin film, which has led to its being called membranous conjunctivitis. This form is easily distinguished from true diphtheria. In the former you can easily remove the membrane; but in the latter, not; it is thick, and extends into the substance of the conjunctiva; it is much more rapid in its course, and often likely to show its effects elsewhere. Swelling of the lids is quite a characteristic symptom of purulent ophthalmia, but should not be considered really diagnostic, as this is a characteristic of diphtheria. Another peculiarity of this disease worth remembering is, that at its very commencement, the ocular conjunctiva only may be principally involved. The colorless serous infiltration of the ocular conjunctiva in the early part of this disease is occasionally seen, and is of bad omen.

The *prognosis* is more unfavorable than that of any other eye disease, except, perhaps, diphtheria. This is owing to the tendency of the cornea to undergo destructive changes. Perforation may take place, and the contents of the eyeball be lost. Phthisis of the eyeball, or great shrinking of the capsule, is often a consequence of this disease. If this does not take place, we are likely to have opacity of the cornea. If some part of it is lost by ulceration, we may have anterior synechia, which may draw the iris to one side, so as to occlude the pupil. When the disease becomes very violent, we may have ophthalmitis, that is, essentially, an irido-choroiditis, and when severe, may result in phthisis of the eyeball, the choroid and iris being the principal source of the nutrition of the globe. These, then, are the principal complications to be feared in an unfavorable case.

I will go back for a moment to mention a phase of this disease. When, in its beginning, the ocular conjunctiva is principally involved, and there is considerable chemotic swelling, I think you can anticipate an unfavorable prognosis. No cornea can resist continuous swelling of the conjunctiva of the globe for more than a short time, as it interferes with its nutrition. The gravity of the case is largely dependent upon the kind of epidemic which prevails. In treating these cases in the Foundling Asylum, I met with so much success that I began to congratulate myself. But, to my astonishment, one fine summer's morning, I found several eyes nearly spoiled by perforation of the cornea; afterwards, naturally, my treatment was more cautious.

I remember a case which was under my charge a short time since, attended with but little pain, but there was a hard swelling of the ocular conjunctiva. I observed

this for several days, and was fearful lest the cornea should be involved, but did not feel like resorting to heroic measures. After a few days the cornea began to be hazy at one corner; this slowly extended, and the eye was eventually spoiled (hopeless opacity of cornea, but no phthisis). One point which you should not forget is, that when a patient has had one ulcer of the cornea, do not be sure that there will be no other, for these cases relapse occasionally. At night is the time when relapses take place most readily. There may be one, two, or three relapses, which may end only by the destruction of the eye. An ulcer may perforate the cornea within a few hours, while you yet have the case under observation, and are treating it. Fortunately, this tendency to relapses only occurs in a comparatively small number of cases; these I would call *malignant*.

In early stages of this disease, the first indication for *treatment* is, the thorough cleansing of the eye. This is best done by the use of salt and water, a drachm to the pint. The eye may be washed with this solution, every two or three hours, usually as often as the secretion makes its appearance. Care should be taken not to irritate the eye by excessive handling. You may take what is called a silk sponge, or a piece of old linen saturated with salt and water; then, while an assistant gently separates the eyelids sufficiently to allow the eyeball to be exposed, the application may be effected. As the secretion is liable to be rolled up into minute masses, and even into elongated stringy particles, it will be necessary to gently wipe the part for their more thorough removal. In doing so, you should be careful not to harshly rub the conjunctiva, for fear of causing bleeding, as we are likely to have hæmorrhage induced by slight violence. If it is possible to evert the eyelid, you may do so, and frequently, in the superior cul-de-sac, minute masses of mucus, or mucopus may be found, which act as foreign bodies, and must be removed. If the disease does not promise to be of the severer variety, I would be careful, for a day or two, not to do too much to the eye. If there is considerable heat and swelling of the eyelids, it will be proper to use cold. For this purpose, dip bits of old linen into ice water, and apply them to the eye, changing them every three to five minutes; excess of water should be squeezed out of the cloth. This is the best method of applying cold, unless, indeed, you use a rubber bag containing water and pieces of ice. By the latter method, there is danger of producing an excessive degree of cold. In all cases, you should be careful not to push the cold farther than to moderately diminish the excess of heat. As soon as the lids are cool, remove the dressing, and wait awhile until reaction takes place, the object being simply to keep down the excess of heat during the inflammation. I think it a safe procedure in all these cases to use atropia. If you are fearful of irritating the conjunctiva, do not use it more than once a day, or just enough to maintain dilatation of the pupil. This will give you a diagnostic point as to whether the iris has become involved. I have been in the habit, latterly, of using a wash for purposes of disinfection. Carbolic acid, half a drachm to a drachm, to a pint of water, is as good as anything. The eye may be carefully bathed with this, three or four times a day. After a day or two, astringents may be cautiously commenced, but I would wait until the discharge has become fully developed. In the early stages there is very little discharge, and it is thin in quality. The conjunctiva is intensely red, and, perhaps, shining, a condition which would contraindicate the use of stimulants or astringents. We want to observe some relaxation before we are sure of the indication for the use of astringents, and this stage will be coincident with that of excessive discharge; that is, when the disease has reached its acme, or, perhaps, a little beyond that point.

Nitrate of silver is the most valuable remedy of the class of stimulants that can be used in this disease. As a collyria, you may use it of the strength of two grains to the ounce of water, dropped into the eye three times a day. If this is operating satisfactorily, the eye will experience a relief from its use, and the discharge will have a tendency to become somewhat thinner. Alum, a drachm to the pint, may also be used in the same manner, but it is of less value than nitrate of silver.

When the disease is fully developed, and there is great swelling of the eyelids, with chemosis of the ocular conjunctiva, producing the cupped appearance of the cornea, and accompanied by pain, the indications will be somewhat changed. While the excessive heat continues it will be indicated to use cold applications. At this stage it is nearly or quite impossible to evert the upper eyelids, unless it is done with such violence as to make it inadmissible. But excessive swelling of both the palpebral and the ocular conjunctiva is very dangerous to the integrity of the cornea, owing to the disturbance of its nutrition, consequent upon interference with the blood supply, consequent on pressure. What is the best manner of meeting these indications? In the first place I would suggest a canthotomy; that is, a division of the external canthal ligament. The incision should be carried well down to the rim of the orbit, the points of the scissors going somewhat upwards; at the same time you should be careful not to make more than a little nick in the conjunctiva. I would suggest first to make a slight incision through the whole thickness of the lid, then pass the points of the scissors outside of the conjunctiva, making a second incision, which shall extend farther. As the lid by this time will not be sufficiently cut away, you may pass the scissors between the conjunctiva and the skin, and cut away the ligament still more. For this purpose the scissors may be passed almost directly upwards, and by successive cuttings, while holding on to the lid with the fingers, you will soon find when the power of the orbicularis has been sufficiently weakened. The lids must needs be so divided as to give way under the pressure of the fingers; in other words, it must be pretty well cut off, in order to relieve this pressure upon the eyeball, which is doing so much mischief. This operation alone, I believe, has saved many corneas. I would not wait until corneal changes have taken place, for then it will be too late. If there is excessive swelling and considerable pain, and the swelling remains for two or three days, without any sensible subsidence, shall we scarify the conjunctiva? My present impression is that the feeling of ophthalmic surgeons generally is not to scarify as much as formerly. Should you, however, wish to adopt this method, you may evert the eyelid, and, by gentle strokes, with a sharp instrument, scarify the palpebral conjunctiva sufficiently to produce considerable bleeding. In scarifying the ocular conjunctiva I would use a little more care, the incisions should pass from near the cornea outward, in a radiating direction, otherwise too many vessels will be divided and the nutrition of the cornea jeopardized. If there is ulceration of the cornea, or opacity anywhere, will you do a paracentesis? Many authors are opposed to this operation in the acute stage. I am, on the whole, in favor of doing it in properly selected cases. The indications for operation would be the continuance of a considerable degree of pain, with commencing corneal changes, and increased tension of the eyeball (which you will find difficult to determine, as the swelling of the lids disturbs very much our judgment in this matter). I remember distinctly, some years since, an epidemic which occurred in the New York Foundling Asylum, of this city, in which, before my attention had been fully attracted to the severity of the epidemic, several corneas became perforated. After

this I watched the cases with considerable care, and when a cornea showed a loss of any epithelium or any cloudiness, an operation was at once performed, and after that I do not remember to have observed the perforation of a single cornea. Paracentesis may be done every day or two, if necessary, but do not think that it will save the cornea after it has become considerably infiltrated. Certainly, if the cornea becomes cloudy *early in the disease*, you will despair of saving it, whatever you do. On the contrary, when it occurs during the subsidence of the disease, you may then expect better results from paracentesis. Together with paracentesis I would make a pretty vigorous exhibition of atropia, using a four-grain solution three or four times a day. If there are paroxysms of pain the atropia may be used every fifteen minutes until it has subsided, if this is possible. It will be proper, if our cold and atropia does not relieve the pain, to administer some form of an opiate. However, in this stage, when the corneal changes show signs of taking place, hot applications are acceptable, and may be used on the theory that heat is stimulating to the eyeball, and assists in maintaining its vitality. The hot applications may be made in the following manner: Small bits of rags, dipped in water, as hot as the assistant can bear, are wrung out into the eye. This plan, though very serviceable, is not quite so practicable as the dipping of rags into very hot water and laying upon the eyes, and changing them frequently. A small, thin, and light rubber bag, containing hot water, is a good method of applying heat, in the same way that it was used in applying cold. In this stage it is quite proper, in making applications, to continue to use those which afford most relief to the patient, barring one exception, hot applications. If the latter are applied continuously, for some time, they will act like a poultice, and produce a maceration or softening of the tissues, which may be accompanied by relief of pain, but are likely to facilitate the disorganizing processes.

If the cornea breaks down for a considerable portion of its area, the eyeball is destroyed. The lens is likely to be extruded, or if not, the cicatrix forming will cover so large a portion of the cornea as to make any future operation for visual purposes impossible. Moreover, it may develop into a staphylomatous protrusion which may give rise to a good deal of trouble. Naturally, if the lens is extruded with discharge of vitreous humor, or if there is panophthalmitis, you can only expect atrophy of the eyeball—phthisis bulbi. Although the disease does not always involve the second eye, it is liable to do so on account of the poisonous matter passing from the bad to the good eye. Hence it will often be proper to seal up the unaffected eye. This should be done in the early stages of the disease, before the formation of pus has shown itself to any extent. For this purpose, you may take a piece of absorbent cotton, and apply it to the eye; this is covered with diachylon plaster. A coating of collodion is now applied over the plaster so as to secure it to the skin, and hermetically seal the eye. A second coat of collodion is passed over the whole, and the dressing is complete. This may be removed daily, and the eye carefully examined. It will be well to wash the closed eyelids with carbolic acid, so as to destroy any poisonous material found on them. This is about the ordinary termination of blennorrhœa. It will either be soon well, or will go on into a chronic state of inflammation, assuming a condition known as chronic granular conjunctivitis, or even true trachoma. These conditions will require appropriate treatment. During the period of discharge and swelling of the conjunctiva, after it becomes possible to evert the lid, nitrate of silver may be applied to the conjunctival lining. From 40 to a 100 gr. solution should be used, sufficiently strong

to make an impression on the lid. If it is doing well, the discharge will become thinner and the swelling diminish; photophobia should not result from the application, and to protect the cornea, it should be carefully washed off with salt and water. In a later stage alum or cup. sulph. in substance may be substituted. As long as the good effect of one application continues do not repeat it, but even strong arg. nit. may sometimes be repeated daily, for two or three weeks. Do not continue one remedy after it seems to disagree with the patient, but change to another.

ORIGINAL ARTICLES.

THE VARIOLOUS DISEASES:

VARIOLA—SMALL-POX; VARIOLOID, AND VACCINIA.

History, Etiology, Clinical and Pathological Characteristics, etc.

BY ROBERTS BARTHOLOW, M.D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

History.—The first accurate description of variola to be found in medical literature is that of Rhazes, an Arabian physician, who lived in Bagdad about the beginning of the tenth century. He maintains that Galen was acquainted with the disease, but he bases this statement on an erroneous translation. The writings of Rhazes on small-pox and measles have been translated for the Sydenham Society, by Dr. Greenhill,¹ and may, even now, be read with advantage. There was no word in the Greek or Latin languages for this disease. The term *variola* was coined out of the Latin *varus*, a pimple; or *varius*, spotted; and the first appearance of this word in literature was in the year 961. *Poc*, as the word was written originally, is Saxon, and signifies a bag or pouch; but it has since been written *pock*, or *pox*. In the fifteenth century syphilis appeared, and then *small* was added to *pox*, to distinguish it from the *big-pox*, or syphilis. The earliest reference to a disease, agreeing in its clinical features with small-pox, was in the sixth century, during which an epidemic of this malady appeared in Arabia and Egypt. The extraordinary social and political convulsions which attended the rising of Mohammedanism served to spread the disease through the surrounding nations. After Columbus, America was visited, and small-pox and gunpowder came into the continent with Christianity and civilization. The followers of Cortes introduced the disease into Mexico, and more than three millions of the people perished in one epidemic. After its first appearance in Europe, successive epidemics carried off vast numbers. In the eighteenth century thirty thousand died annually from small-pox in France, and about the same proportionate mortality obtained in Prussia and other European States. So universal was the prevalence of the infection, and so remote the probabilities of escape, that it became a proverb—"from small-pox and love few remain free." (Curschmann). Before the discovery of the protective power of vaccination, this disease, for several centuries, had been

the terror of mankind. It was to be feared not only because of the immediate mortality, but the deformities and impairment of function which resulted in a considerable portion of the cases. The present epidemic, although sufficiently grave to cause uneasiness, does not compare in violence to the great epidemics which decimated the countries visited by them. In place of the terror, which formerly seized mankind on the approach of a small-pox epidemic, there is now a sense of security and protection felt by all those who have the wisdom to avail themselves of the immunity secured by vaccination.

Causation.—There is now no difference of opinion in regard to the existence of a contagious principle—a peculiar poison, whether an unorganized ferment or a minute organism—which, reaching the person of a susceptible subject, undergoes a process of multiplication, and develops the morbid complexus of variola. There can be no doubt, also, that the poison exists in the pus of the pustules in its highest activity. It would be more correct, probably, to say that the virus is most infective at that point in the development of the pustules when the clear fluid of the vesicles begins to grow turbid—when the vesicles are changing to pustules. There is, probably, no part of the body which may not impart infection. Emanations from the patient—perspiration and breath—contain the poison, but its activity is in inverse ratio to the distance. The stories told of contagion happening to persons who passed by the house or called at the door of a variolous subject, are largely apochryphal. Not less doubtful is that assumed keenness of scent possessed by some physicians who affect to smell small-pox from the street when the patient is in a remote upper room. The odor of a small-pox patient is peculiar, and some physicians have, it must be admitted, an astonishing acuteness in distinguishing it, when in the *immediate neighborhood* of the person affected. It is supposed by some that the odor is closely connected with the *materies morbi*; others maintain, and with more reason, that the odor is the product of the putrefaction of the pus and exhalations from the body, which have soaked into the bedding and clothing.

The susceptibility to the contagion of small-pox varies in different individuals, and is probably not wanting to any one. Negroes possess a special aptitude. The period in life of the maximum susceptibility is from the first to the fortieth year, but it may happen at any period. The disease occurs even in intra-uterine life, but it is exceedingly rare. A healthy mother has given birth to a child with small-pox, but it is more usual for the infection to take place from the mother, who is also affected with the disease, although it may be in an abortive form, which was not correctly diagnosed.

The susceptibility to variola is usually destroyed by having an attack, but there are some examples of two, even three, seizures in the same person, but they are comparatively rare. Successful vaccination is not inferior to variola in the power to remove the susceptibility, but the questions connected with vaccination are reserved for future consideration. The virus is conveyed by articles of clothing, paper

¹A Treatise on the Small-pox and Measles, by Abef Beer Mohammed Hu Zacariyá Ar Rázi (commonly called Rhazes). London, 1848.

money, which were on or about the person during the disease. It may preserve its activity for a long time—for months, even years—when not freely exposed to the air. Those who handle rags are, as all the world knows, much exposed to contagion, and many are attacked. There can be little doubt that paper money is a frequent medium of communicating the disease, for few of those affected possess no specimens of the paper currency. At what period in the course of the disease the chances of contagion are most numerous, cannot be accurately stated. It is reasonable to suppose that the poison is most intense when the disease is at the maximum, but it is certain that infection may occur at any time, even during the period of incubation. The susceptibility of those exposed has a large influence on the result. Very singular experiences have been narrated in respect to the sensations felt at the time of exposure to small-pox contagium. A disagreeable and sickening odor, faintness, giddiness, and fright, have been experienced at the moment of contact with the virus. But such sensations are rare; usually nothing is felt or suspected at the time. A certain period elapses from the moment of acquiring contagion until the symptoms begin. This period is entitled

The Incubation.—Unconsciously to the affected person, in a majority of the cases, the poison works “an infection of the blood,” multiplies or develops, until solids and fluids alike receive the impress of the taint. In a minority, the period of incubation is accompanied by a general *malaise*, by languor, mental and physical, restless nights, feeble digestion, and other evidences of illness. The duration of the period of incubation is about fourteen days for small-pox, but it is not a fixed period. It ranges from ten to fourteen days in most cases, but may be as short a time as five days. Some individuals appear to have a natural proclivity to small-pox, and in them the variolous germ affects all parts with great promptitude. The more intense the poison, probably, the shorter the period of incubation. A distinction has been made between the *incubation* and *invasion* period, the former extending from the reception of the poison to the onset of symptoms, and the latter from the initial chill to the appearance of the eruption.

Symptoms.—*The invasion period* begins when the incubation ends. From the first disturbance—the chill—to the appearance of the eruption, is an important period, sometimes called the *prodromic*, sometimes the *initial*, but which we prefer to designate, as the older writers have done, the *invasion period*. The chill with which the disturbance begins may be a violent rigor, or consist of a state of chilliness lasting several hours. The fever rises promptly, on the first day even, to 103° or 104° Fahr., and the pulse corresponds, attaining to 110 or to 140 per minute. Not to occupy space with minute details, it suffices to say that the systemic state is that of a high fever. There are, however, certain peculiarities of the invasion stage of small-pox which demand the most careful consideration. An intense, splitting headache, an equally severe backache, and rending, tearing pains in the ex-

tremities, especially about the joints, characterize the onset, and persist during the whole of this period. There may be violent delirium, and in children, convulsions. On or about the second day, but very irregularly in point of time, the peculiar *rashes* or eruptions of the invasion stage, make their appearance. These require attentive examination the more since they give rise to errors of diagnosis. Nothing is more common than to hear in the reports of society meetings, examples of the concurrent appearance and development of scarlatina or measles with variola, when, indeed, they were simply examples of these invasion rashes. They are rather exceptional than regular; are common in some epidemics, but are unknown in others. They have the aspect of a scarlatina or measles eruption, or they are petechial or hæmorrhagic, and sometimes these characteristics are combined, as petechiæ overlying the scarlatina exanthem. A further peculiarity of these invasion rashes is their arrangement. The erythematous are apt to be diffused over the body or localized to the anterior or extensor surface of the extremities and extend along in the form of a streak. On the other hand, the petechial rash is collected in certain regions forming triangles, and named from the expert who defined them, “Simon’s triangles.” The *crural triangle* is the eruption collected on the lower abdomen, the genitals, and the inner surface of the thighs, and the *brachial triangle* is formed by the eruption on the pectoralis, the axilla, and the inner face of the arm. An important aid to diagnosis is thus afforded us amidst the perplexing doubts which must arise during the invasion stage.

The duration of these rashes is variable; the erythematous disappearing in from twelve to twenty-four hours, and the petechial lasting several days.

The invasion stage exhibits other peculiarities. In a few instances, fortunately, the poison acts with deadly intensity; the blood is quickly decomposed, and death ensues before the eruption can appear. The disease, beginning in the usual way, but violently, is characterized by the occurrence of great prostration, by the appearance of an erythema on the body and extremities, and by subcutaneous hæmorrhages. Petechiæ and vibices flow into the erythema, and, whilst discrete on the extremities, form large, irregular figures on the abdomen and chest. Hæmorrhages take place under the skin of the eyelids; the conjunctivæ are intensely infected, and the face is swollen; diphtheritic exudations form in the fauces; albumen appears in the urine; hæmorrhages occur from the mucous surfaces generally, and the body emits a horrible fœtor, and has a dark-grayish or black tint. Such cases terminate in a few days, rarely continuing beyond the sixth day. This form of the disease owes its grave character to the hæmorrhagic diathesis—to the dissolution of the blood—and is, hence, styled *purpura variolosa*.

The Eruption Stage.—At, or soon after, the third exacerbation of the invasion fever, the eruption begins to appear. With the coming out of the eruption a great change occurs in the other symptoms. In many cases—especially the milder, discrete ones—

the temperature falls in a few hours to normal, or even below. In other cases, the fever remains at the maximum, or rises even higher, for twelve to eighteen hours after the eruption begins to show itself, when a gradual decline to the normal occurs in the less severe cases. In the severe corymbic, and in the confluent forms, however, and in the hæmorrhagic, the defervescence is slight, or there may be none. With the appearance of the eruption, also, there is a remarkable improvement in the condition of the patient. The severe pains in the head, back, and limbs cease; if vomiting has occurred, it is arrested; if there has been delirium, the mind clears.

The eruption appears first on the forehead and hairy scalp, and spreads thence over the body within twenty-four hours. The whole number of papules are out within two days. When each papule is perfectly distinct, and separated by a district of healthy skin from all surrounding papules, the eruption is said to be *discrete*; when the papules are so thickly placed that, although each is distinct, they come into contact at their border, the eruption is said to be *coherent*, and when they are merged together without distinction, *confluent*.

The eruption forms around a hair follicle or the orifice of a sebaceous or sudoriparous gland. At its first appearance, to the touch it seems like a bird-shot lodged in the skin, so well defined and hard is it. On the second day the eruption has a distinctly papular character, is larger and redder in color. On the third day of its existence the papule is still further enlarged; it now contains a pellucid fluid, which, for a day or two increases in quantity, becoming first cloudy then distinctly purulent. As the vesicle thus changes in the character of its contents, it also alters its form somewhat; a depression or umbilication appears in the centre, corresponding to the opening of a follicle or gland in the skin, but this is not invariable, for the umbilication still is present in the pustules formed elsewhere. Auspitz and Basch¹ held that the central depression is produced by the more rapid development of the periphery, and consequently greater accumulation of material in this part of the pustule.

The anatomical structure of the pock is an important and interesting part of the subject, for the nature of the pustule is the same whether the disease be small-pox, varioloid, or vaccinia. The first point to note is, that one incision, unless it include the whole circumference of the pock, will not evacuate the lymph. There are septa, which divide the pustule, and in the interstices of which the lymph is enclosed. The pock has, in fact, a cellular structure, a network of an epithelial character, which is well depicted in (Tafel vi., Fig. 1) the plate accompanying Auspitz and Basch's article, and reproduced by Curschmann.²

In about six days after the first appearance of the eruption, the pock is fully developed. If undisturbed in its development, it is then hemispherical in shape, with bevelled margins, and the central cup has filled up as the purulent contents have accumu-

lated, so that the top is rounded off or *acuminated*. The previously clear lymph is now filled with pus corpuscles, and hence, the contents of a matured pock are purulent. The inflammation in the skin is not strictly limited to the site of the eruption. On the fourth day an inflammatory circle surrounds each pustule, and is known as the *areola*. It deepens in color and widens at the circumference, as the maturation of the pustule proceeds. Within this area the skin is hard and brawny, and more or less swollen, consequently when the pustules are thickly set there may be great deformity—as about the face—the features becoming indistinguishable in coherent and confluent cases.

The *maturation* of the pustules is no sooner completed than a process of drying and the formation of a scab begins. About the seventh, eighth, or ninth day of the eruption a viscid material exudes from the pustules, quickly dries into a yellow waxy coating; the contents also solidify, and thus a scab is formed. As the drying proceeds from the centre, the umbilication again appears. The formation of typical scabs may be prevented by rupture and escape of the contained pus and by confluence. When the crusts are detached, the place which they occupied has a dark, brownish tint, which finally disappears, the scar becoming paler ultimately than the surrounding skin. As very considerable sloughing may occur in some situations, especially about the face, very unsightly deformities will result.

The eruption is not limited to the external integument, but appears, also, on the mucous membrane lining canals opening externally, especially on the lips, pharynx, tonsils, and palate. Invasion of the larynx will be shown by the change in the voice, and the nasal passages will be obstructed when the pustules form in them. The vagina, urethra, and rectum are comparatively exempt, although not entirely so, the pustules being few in number and widely distributed.

The order in which the maturation and exsiccation of the pustules takes place, is that of the original efflorescence. The parts on which the papules first form are, also, the first to go through the successive steps in development up to the final desiccation and scabbing. Those parts occupied by the invasion rashes may be free from the eruption, but the same parts may be exempt when there were no preliminary eruptions.

We are now prepared to consider the various phenomena attendant on the development of the pustules—their maturation, desiccation, and cicatrization.

It is not difficult to conceive that such an extensive inflammation of the skin—such wide-spread suppuration—would induce the most severe disturbances.

Fever of Maturation.—When the lymph becomes purulent, the fever rises again into prominence. With the appearance of the eruption, the fever in discrete cases falls to normal; in the more severe coherent cases, declines notably, and in the confluent cases, merely lessens a little; but when suppuration occurs, the temperature rises in correspondence with the extent of pus production. The maturation fever

¹ Virchow's Archiv. Band xxviii., p. 337. Untersuchungen zur Anatomie des Blattenprozesses.

² Ziemssen's Cyclopædia, Vol. ii., p. 383.

is of the quotidian, remittent type, and the maximum heat ranges from 101° to 104° Fahr. The pulse has a frequency in conformity to the range of temperature, and fluctuates between 90 and 160, according to the age and sensitiveness of the subject. Various circumstances contribute to the disturbance. The burning in the skin, the soreness of the tongue and throat, the aching of the back and limbs, the headache and the wakefulness, make up a complexus of severe symptoms. It is not surprising that delirium should occur in many cases; sometimes it is of the ferocious kind, the patient becoming dangerous, jumping from the window and escaping into the street; sometimes it is of the low, muttering variety, and in the subject of chronic alcoholism it readily takes on the characteristics of delirium tremens. From the eighth to the twelfth day of the disease the fever of maturation is at its maximum. With the process of desiccation, it declines, by slow stages, the daily excursions of the temperature growing shorter, until, with cicatrization, the normal is attained.

With the drying of the crusts, usually, considerable itching is experienced, and injury is done by scratching if any additional inflammation is thereby induced, but not otherwise. At the site of the pustule, after the scab is detached, more or less pigment deposit gives a brownish appearance to the cicatrix. After some weeks these disappear, and gradually the scar assumes the well-known and characteristic appearance. The skin may be damaged in other ways. The hair follicles may be destroyed and the hair fail to be restored, but such a disastrous result is unusual. The nails, another appendage of the skin, may also be destroyed, but this rarely happens.

Course, Duration, and Termination of Discrete or Coherent Variola.—From the initial chill to the appearance of the eruption, is the invasion, initial, or prodromic period. The eruption comes out at or after the third exacerbation of the fever—from forty-eight to seventy-two hours after the rigor, says Gregory. The process of maturation of the pustules occupies from five to ten days, the average being about seven days. Drying, scabbing, cicatrization, and the falling off of the scabs, will occupy some days longer. About three weeks will thus be occupied in an uncomplicated case with the evolution, progress, and decline of the disease. Convalescence will be more or less protracted, according to the severity of individual cases.

The question of termination is so largely affected by the form of the disease and by the protective power of vaccination, that no general statement can afford any instruction. The period of the disease at which a fatal termination is most to be expected is, however, an affair of some moment. We find in a table of 168 cases of death given by Gregory¹ that the largest number of deaths occurred on the eighth day, the eleventh day coming second, and the ninth day, third, in the order of relative frequency.

So much depends, in the consideration of the variola question, on the number of pustules, and on

a certain unexplained virulence of the poison, that we must not fail to pursue these topics. The former must be studied as it occurs in *variola confluens* on the one hand, and in *varioloïd* in the other; the latter presents itself to us in the *hæmorrhagic variola*.

VARIOLA CONFLUENS.

In this form of the disease we find the variolous poison most active and deadly. This characteristic manifests itself from the beginning of symptoms. It is probable, also, that the period of incubation is shorter. The initial chill is most violent, the headache and backache intolerable, and the limbs are torn with rending joint pains. The eruption struggles for an early appearance, and the fever is high, with feeble remissions. The eruption appears earlier than in ordinary cases, and it comes out almost simultaneously over the whole body. At their first appearance the papules are so closely placed on the face and hands that no part of the skin seems untouched, and on the second day are already uniting in large, flat vesicles. The skin by this time is much swollen, deeply red, and covered with patches of the confluent eruption; on the third day elevated into large, flat, sero-purulent bullæ. The face is especially the seat of the most complete confluence of the eruption, which here forms a large pustule, covering the whole and completely obscuring the features, which are further blended together without distinction by the enormous swelling. Elsewhere the eruption is closely placed, even coherent, but not confluent except over small areas.

The mucous membrane of the mouth, pharynx, larynx, and nose, is also the seat of a confluent eruption. Extensive diphtheritic exudations cover the tonsils, palate, and cheeks, and extend into the nose; the tongue swells enormously, and protrudes between the teeth, covered with large bullæ; the larynx is not only attacked by the eruption, but the cartilages are inflamed and necrosis ensues; oedema of the glottis occurs; a horrible fetor is emitted from the nose and throat; the submaxillary, sublingual, and deep cervical lymphatics are greatly swollen, impeding the return of blood from the head; swallowing is excessively difficult or impossible; respiration is labored and shallow, and the conjunctivæ covered with pustules; the cornea may be perforated.

The fever of the invasion stage ranges from 104° to 108° , even to 110° Fahr. When the eruption appears the temperature falls but a little, and as the pustules mature, rises again to the former point, or even higher. The other general symptoms are correspondingly severe; the pulse is small, rapid, and feeble; there are severe, often uncontrollable vomitings, and an exhausting diarrhoea may set in. Stupor and coma, or violent delirium, may occur in different cases; or, after active delirium, coma may supervene. In some cases the mind is perfectly clear until near the close. Albumen is present in the urine in a considerable proportion of cases.

Various complications arise in the course of confluent small-pox; intercurrent diseases, as endocarditis, pericarditis, pleurisy, and pneumonia, abscesses, sloughs, and gangrene, and cerebral de-

¹ The Eruptive Fevers, op. cit., p. 76.

rangements from the pressure on the jugulars, and from albuminuria.

Course, Duration, and Termination of Confluent Variola.—As already indicated this form of variola is more rapid in its course than the ordinary form. Owing to the concentration and activity of the poison, the invasion fever ranges at the maximum (105° to 110° Fahr.), the eruption anticipates, and the temperatures lessens but slightly when the exanthem appears to rise soon to the maximum again. In the most severe cases the eruption scarcely appears, the skin is dusky red, and so greatly swollen that the features cannot be distinguished, the circulation is very feeble, the urine scanty or suppressed, and the mind wanders in a low delirium. Death ensues in such cases, as in those of purpura variolosa, from the profound changes in the blood, before the characteristic evolution of the disease can take place.

In other cases the termination occurs by exhaustion from the extraordinary range of temperature during the development of the eruption. With maturation and the extensive suppuration, pyæmia develops in some cases, and proves fatal. Others again are carried off, during the eruptive stage, by an acute œdema of the glottis. Sloughing and gangrene of the fauces, with diphtheritic exudations, swelling and black discoloration of the tongue, with deep-seated phlegmon of the organ, and a profound adynamia of the general system, are symptoms to which the older writers applied the not inapt term "black small-pox."

If the patient survive the various accidents and complications, he may succumb to the exhausting discharges, and to the abscesses and sloughs that follow in their wake. Although the mortality is large, death is by no means invariable. When recovery ensues, convalescence is necessarily tedious. Extensive losses of substance must be repaired, and in a large proportion of cases, permanent deformity, to a greater or less extent results from destruction of the cartilages of the nose, larynx, perforations of the cornea, and of the drum-head, etc.

VARIOLOID.

As variola confluens represents one extreme, so varioloid is the type of the other extreme. That varioloid is a distinct disease is a popular but an unfounded medical opinion. There is no true distinction between variola, varioloid, and vaccinia, for, as we will see, the anatomical structure of the pock is the same in each.

Varioloid is simply small-pox, modified by some circumstances, chiefly by the process of vaccination. Before the discovery of vaccination, however, there were occasionally encountered cases characterized by the mildness of the symptoms and the irregularity of their behavior. It is supposed that in such persons an insusceptibility to the variolous poison existed. At the present time, however, the chief cause of the extraordinary mildness and irregularities of many cases is the protective influence of vaccination.

The invasion stage of varioloid varies greatly in violence, but its severity is no measure of the gravity of the case to follow. The invasion rash—*erythema*

—is of common occurrence in varioloid. As the regular eruption—it will be remembered—does not, as a rule, appear on those parts occupied by the invasion rashes, it follows that the more extensive the invasion exanthem, the less the number of pocks to appear. Whilst it is true that the erythematous eruptions of the invasion stage belong to varioloid, the petechial belong to variola. It seems to be true, further, that the better defined the erythematous rashes of the invasion stage of varioloid are, the milder the disease. A careful study of the eruptions of the invasion or prodromic stage is, therefore, necessary to make them available as accurate prognostic and diagnostic guides.

The invasion stage of varioloid may be shorter, but is more often longer than that of variola—often four rather than three days. The fever may be very considerable and there may be much headache and backache, but when the eruption appears, a rapid defervescence takes place to the normal temperature or even below it, and at the same time all of the pains and other distresses cease. The fever does not again appear, except at the period of suppuration, when it occurs in some cases briefly.

The eruption of varioloid does not pursue any regular order; sometimes beginning on the body, sometimes on the face, and now it spreads regularly over the whole surface; again, it appears simultaneously on all parts. The eruption itself exhibits similar peculiarities. The pock has the same structure as that of variola, and sometimes extends as deeply into the true skin, and leaves a distinct cicatrix; but more frequently it does not fully develop, or passes through the several stages of development imperfectly. The eruption of varioloid, when it goes through all the stages, begins as a small papule, and, in twelve to eighteen hours, assumes a vesicular appearance, sometimes with, often without, the umbilication. On the third or fourth day, the clear fluid of the vesicle is becoming purulent, and it is surrounded with an areola, but there is no swelling of the skin. The pustules dry by the fifth to the seventh day, usually without bursting; and the scab falls off very soon, leaving a slightly colored spot, which soon disappears. The number of pustules varies greatly, and, of course, according to the number of them is the severity of the disease.

HÆMORRHAGIC VARIOLA.

When a purpuric condition of the blood is associated with variola in its invasion or prodromic stage, we have that condition which has been entitled *purpura variolosa*. The variolous poison is then in its highest degree of activity. Before the exanthem can develop, the patient is moribund. *Hæmorrhagic variola*, however, is that form of the malady in which hæmorrhage occurs during the stage of pustulation. The debilitated convalescents from other diseases, and women in childbed, are especially liable to this form. It is characterized by the severity of the pains, the range of temperature, but especially by the occurrence of hæmorrhages into the pustules at various stages in their development, and from the free mucous surfaces. The hæmorrhage may occur in the papules before developing their vesic-

ular character, or in the vesicles on forming, or in the pustules after they are fully formed. The order in which the eruption is affected by the hæmorrhage varies, most frequently beginning on the inferior extremities. Sometimes a part of the body—it may be a very small part—is affected; sometimes every pustule is hæmorrhagic. The hæmorrhage occurs by degrees. Not only the pustules, but the skin generally, between the pustules contains ecchymoses and petechiæ. Large livid spots appear on the mucous membrane of the mouth and pharynx; extensive diphtheritic exudations form on the tonsils, palate, and cheeks, and the breath emits a most offensive odor. Hæmorrhages also take place from the nose, intestines, kidneys, and pregnant women abort with frightful hæmorrhage.

As regards the violence of the symptoms and the mortality from this disease, much depends on the extent of the hæmorrhages. If but a few pustules are hæmorrhagic the symptoms will not be so grave, and recovery may result. As a rule, however, this form of the disease is the most formidable, next to its cogener, *purpura variolosa*. The prognosis will be governed by the extent of the hæmorrhages, and by the consequent state of the vital powers. The more intense the fever, the more grave the case unless in those examples of low temperature and high pulse-rate due to hæmorrhage.

VACCINIA.

The vaccine disease occurs in the cow and horse, certainly; and probably, also, in other animals. Man is brought within its influence only by inoculation. It is a vesicular disease, specific in character, and has its seat on the teats and udder of the cow, especially of the milch cow. After a period of incubation, from three to eight days in duration, the udder appears hot and somewhat swollen, and papules come out on the udder at the base of the teats, and on the teats themselves. By the fourth day each papule has become a vesicle, and is distinctly umbilicated. The number of vesicles varies from one or two to ten or twenty, and in size they range from that of a large pin's head to a dime, the usual size being that of a pea. When allowed to develop without any obstruction, and not too closely placed, they are circular in shape; have a whitish, glistening aspect; and contain a transparent, viscid lymph. Around them is an areola, and the subjacent skin is hard and brawny. By the tenth or eleventh day the pustule is fully formed, the central depression has disappeared, the surface is conical and globular, and a quantity of yellowish lymph flows out on rupture. By the twelfth day desiccation has begun, and is completed by the fourteenth day, when the crusts are fully formed. The crusts are now of a dark mahogany color, and are detached about the twentieth to the twenty-third day. The anatomical structure of the vaccine pustule is the same as that of variola; it has the same cellular arrangement, the same umbilication, the same conoidal shape when the process of maturation is complete, and the scab has the same color and form when the separation finally takes place.

The vaccine disease may be artificially produced

in the cow by inoculation, with lymph from other cows having the natural vaccinia, with humanized lymph, and with the matter of human variola. There seems to be no difference in the structure or the resulting pustule. The horse is also the subject of vaccine disease, which has all the characteristics of the same disease in the cow, and may be readily transferred to and developed in the latter animal.

What is the origin of the native vaccine disease? That it is the variolous infection which has been transferred to the cow in the process of milking, there can be no doubt. This fact was established as early as three years after Jenner's discovery, by Gassner, of Günsburg.¹ It is true it is not always easy to effect the inoculation of cows with small-pox, but it can be done if proper attention be given to the details, and the resulting pustules have all the characteristics of vaccinia, produce the same results in man, and are equally protective against variola. The almost universal practice of vaccination must necessarily greatly reduce the number of cases of infection by this source. Vaccinia may, however, be transferred by the hands of milkers, and this is now the chief source of the natural disease. It is only at rare intervals, however, that cases of this kind are discovered. They have been a few times discovered in this country, but much of the virus used by American physicians had its origin in the Beaugeancy stock of France. Recently a case of spontaneous cow-pox has been observed by Dr. Landeau at Epines, France, and a number of heifers have been inoculated with success.² Cases of this kind should be observed with great care, and utilized for the production of the best stock.

There are but two methods of propagating the vaccine disease in cows for commercial purposes that should be tolerated. One is inoculation with variolous poison, and the utilization of the resulting lymph for the production of an abundant supply, by cultivation in carefully selected heifers. Against this method for producing genuine vaccinia has been urged the difficulty of inducing the disease. The highest authority on this subject, Mr. Ceely, of Aylesbury, England, has succeeded in inoculations of variolous lymph, and has produced therefrom a stock of vaccine which has been used in a large number of cases, and which has been proved to exert so perfect a protection that subsequent inoculation of variola lymph was without effect. The same results have been obtained by Badcock in England, and by Drs. Adams and Putnam, of Boston.³ In Russia, Italy, France, and other countries, even in Egypt, this method has been successfully pursued.

The other method for the production of bovine virus, is the vaccination of carefully selected heifers with the lymph of the natural disease. It is probable that the proprietors of "vaccine farms," some of them, at least, use humanized lymph to procure the commercial "bovine virus" (retro-vaccination). Seaton says that this bovine virus "takes" more readily than the original vaccine lymph (bovine),

¹ Seaton's Handbook of Vaccination, Amer. edit., p. 57.

² Journal de Thérapeutique, No. 2, 1882, p. 63.

³ Seaton, op. cit., p. 60-62.

but less kindly than the humanized, and that "papulation is usually retarded, the vesicles are often smaller, and the disease not really so well developed as by the stock from which the lymph was derived."

Has the lymph of the original Jennerian stock degenerated? Jenner maintained that if proper care was exercised in the preservation of the lymph, in inserting it in suitable subjects, its quality must always be maintained at the original standard. The stock now used at the National Vaccine Establishment (London), is the descendant of that supplied by Jenner, and preserves all of its original protective influence, and corresponds exactly in development to the vesicles figured by Jenner in his original work (Seaton). If it has thus preserved its proper characteristics and its activity for more than eighty years, it is not probable that it will ever change. Unfortunately for the good name of the Jennerian lymph—the humanized virus—so little care has been exercised in the preservation of lymph, and in the selecting of subjects for its propagation, that much spurious vaccine has been produced, and used with the confidence only appropriate to the genuine virus. It is not surprising that failure to protect should be alleged against such imperfect virus.

Bovine vs. Humanized Virus.—The question of the employment of humanized or bovine virus involves various considerations. It may be considered settled that genuine humanized lymph descended from the original stock of Jenner, retains the original characteristics as respects manner of development, and possesses the original protective power. There are several vaccine stations in England where this lymph is still used, and it is found to be equal in all respects to the original, and affords the same degree of protection. This fact established, it would seem then to be only necessary to employ such virus. Unfortunately many conditions have occurred to vitiate this matter. It is becoming increasingly difficult to procure unquestionable specimens from the original source. Furthermore, amongst the millions of examples of safe and successful vaccination, there have occurred some few instances of vaccinal syphilis. Probably not more than ten cases of such infection in regard to which no doubt can exist have ever been observed.¹ Other maladies have been reported thus caused, and various eruptions attributed to vaccination, but without reason. The eruptions and other affections due to vaccination will be alluded to further on. If the process of vaccination and securing of lymph were rightly performed, no contamination could occur. Unfortunately the blood and other fluids of syphilitic subjects are sometimes carelessly mixed with the vaccine lymph. The possibility of such contamination has awakened a widespread distrust of humanized virus, and so ready are parents now to attribute any kind of subsequent mischief or disease to the vaccine virus, that if anything occurs at any period afterwards, it is referred to the vaccination.

¹ The cases reported by Mr. Hutchinson have best withstood the criticisms justly made on all examples of vaccinal syphilis.

In consequence of the deterioration of the Jennerian lymph, by careless treatment, and the possibility of contamination by syphilis, bovine virus has come to be largely substituted. This substitution may, or may not be wise. It would be unnecessary if genuine Jennerian lymph were available; it may be desirable if the original vaccine disease furnish the lymph, whether occurring spontaneously or purposely by the inoculation of the matter of variola. It is questionable if bovine virus, from retro-vaccination, is the only source of supply.

There are certain peculiarities in the action of the original bovine virus, as compared with the humanized. It acts with less certainty. From the vast number of statistics on this point, we select those of Dr. Gibert, of Havre, who gives the results of vaccinations and revaccinations as practised at the Dispensary for Infants' Diseases with bovine virus from Milan, and from the French Society of Hygiene, at Paris, and with Jennerian vaccine.¹ Of infants, vaccinations with

| | Cases. | Successful. | Unsuccessful. |
|------------------|--------|-------------|---------------|
| Milan, virus of, | 104 | 89 | 15 |
| Paris, " " | 37 | 22 | 15 |
| Humanized, " " | 64 | 56 | 9 |

Of revaccinations in adults with

| | Cases. | Successful. | Unsuccessful. |
|------------------|--------|-------------|---------------|
| Milan, virus of, | 625 | 352 | 262 |
| Paris, " " | 76 | 32 | 44 |
| Humanized, " " | 27 | 19 | 9 |

These statistics correspond to the general experience of the most competent authorities. Bovine virus acts more powerfully, as respects the local phenomena and constitutional symptoms, and various papular and vesicular eruptions appear on various parts of the body more frequently than when the humanized virus is used. The crust tardily desiccates, and is detached comparatively late, leaving a deep, foveated cicatrix. The harshness and violence of action of the bovine virus declines by transmission through two or three subjects, and the vesicle improves in size and perfection of detail. Obviously, then, *the typical lymph is that obtained from virus three or four degrees removed from the original natural cow-pox, and transmitted through healthy infants.* It is admitted by all who possess any accurate knowledge of the subject, that humanization improves the original vaccine lymph. Only doubt intervenes in respect to humanized lymph, which has been transmitted through so many, that a lack of care in the selection of virus, and of the subjects receiving, may have vitiated the product.

Vaccination and Attendant Phenomena.—To offer observations on the subject of the manner of vaccinating, may seem a superfluity. So much carelessness, however, is permitted, and the consequences of carelessness are so tremendous, that we may be indulged whilst we set forth some general principles.

The skin must be scratched or scraped until the blood appears. If the blood flow freely, the virus

¹ Proceedings of the Académie de Médecine—Journal de Thérapeutique, No. 2, 1882.

should not be inserted until the flow has ceased; otherwise the virus may be washed out. Points of ivory, quills, or capillary tubes may be used. The lymph should be taken from the vesicle when its contents are becoming turbid. As soon as possible the points or quills should be used. The writer has vaccinated successfully with lymph contained in capillary tubes that had been put up in Germany and transported to the heart of this continent. The German method, which consists in mixing the lymph with glycerin, and storing in capillary tubes, is a good one. Crusts are much employed in this country. They possess the advantage of facility in handling and in transportation, but they are not so active and certain as the lymph taken at the most active period. It has been conclusively demonstrated that three or four points of insertion and resulting pustules are much more protective than one. The practice in Germany and on the continent of Europe generally, of inserting the virus at three points, is supported by an abundant experience. Vaccinators in this country, unfortunately, as a rule, puncture at one point only.

Whenever it is practicable, "arm to arm vaccination" should be employed. The vesicle at its most active period should be opened, and the lymph immediately transferred to the child at hand prepared to receive it. In this way the deterioration by storage and preservation is avoided.

As children are peculiarly liable to small-pox, vaccination should be performed at the earliest period—from one month to six weeks after birth in the case of a robust child, and at two or three months if the child is feeble. If exposure occur at birth, the child may be vaccinated as soon as born. It is a sound rule to vaccinate without delay all who are subjected to any special exposure. If delay may be allowed, a child should not be vaccinated if suffering from any acute disease, or from any chronic disease that interferes with the orderly development of the vaccine disease. Acute febrile affections, diarrhoea, and certain cutaneous maladies, as herpes, eczema, and intertrigo, especially, but including all affections of the skin.

Phenomena of Vaccination.—At the end of the second or third day after humanized lymph has been inserted successfully, a little papule has formed, which by the fifth or sixth day has developed into a vesicle, with an elevated border and a central depression, and having a bluish-white tint. By the eighth day after the insertion of the lymph, the vesicle is found to be full of a clear lymph just becoming a little cloudy; it is round, full, its margin elevated and its centre umbilicated; it has a distinct pearly tint, and an areola is forming around. This areola is an inflammatory ring, having a diameter of one or two inches, and rather hard and brawny, because of the swelling of the subcutaneous connective tissue. At this time, also, there is some feverishness, a coated tongue, and there may be, also, some nausea and diarrhoea. These constitutional symptoms may be slight, sometimes entirely wanting, but if absent, and no areola has formed, a suspicion may be well entertained that the vaccination is not genuine. The areola begins to fade after the tenth day. The

vesicle which had developed into a round, convex pustule, begins on the tenth day to dry in the centre, restoring the umbilication, and by the fifteenth day a scab has formed. The scab, as it dries, darkens into a mahogany color, and is detached from the twentieth to the twenty-fifth day. A perfect vaccine scab or crust is round, with an elevated and bevelled margin, a central cup or depression, and has a dark-brownish or mahogany color. The cicatrix is often permanent, lasting through life, and it has certain characteristics by which the genuineness of the vaccination may be determined. It is circular, depressed below the general level of the integument, and distinctly foveated or pitted. When, in consequence of the manner in which the lymph is inserted, several vesicles form in such proximity as to coalesce, the scar will have corresponding characteristics.

Before vaccinating, if delay is allowable, an inspection of the ears and of the skin generally for patches of eczema, intertrigo, etc., should be made. In scrofulous children, so simple an irritation as vaccination, will excite cutaneous troubles, and the locality of the cicatrix may be the seat of strumous ulceration, causing protracted suppuration, enlarged lymphatics, etc. Erysipelas has been developed in some constitutions about the punctures, and spread widely, accompanied by severe constitutional symptoms. Eczema, if it be present in some obscure situation, may begin at the site of vaccination and extend over the body. Very violent phlegmonous inflammation, followed by swelling, and even suppuration of the axillary glands, may be caused by vaccination in some subjects. Much more often is revaccination followed by the accidents above mentioned.

As certain rashes occur during the invasion or prodromal period of variola, so eruptions appear during the course of the vaccine disease. In an address delivered before the Dermatological Section of the International Medical Congress, in London August 5, 1881, Dr. Gustav Behrend¹ gives a good account of the "vaccinal eruptions." He divides them into two groups: vaccinal local diseases; general eruptions. To the former belong the erysipelatous inflammations and eczemata of various kinds. As regards the general eruptions Behrend finds them to be rather rare. "In my position, as public vaccinator," he says, "among the three hundred cases which I vaccinated during the past year, I have observed them only six times." Roseola vaccinia is the only one which has been carefully described. It appears about the third to the eighteenth day, resembles measles strongly, is evenly distributed over the body and appears sparingly on the extremities, and lasts about two days. A second group of vaccinal exanthemata, consists of urticarial eruptions; and a third group of erythematous exudative processes. Also, a vesicular eruption, herpetic and eczematous, appear at various times. In the discussion following Behrend's paper, Prof. Hardy, of Paris, maintained that there are three kinds of vaccine eruptions: exanthemic, diathetic, and generalized vaccinia.² But Behrend holds that

¹ Archives of Dermatology, Oct., 1881, p. 383. Also, Edinburgh Med. Journal, Dec., 1881—a paper by Dr. George Thin, on same.

² Edinburgh Medical Journal, supra.

"a general vesicular eruption is, however, not a general eruption of vaccine lesions, not even when the vesicles resemble the latter in external appearance, and are developed simultaneously," and that they can be regarded as vaccine vesicles "only when it can be proved that their contents are inoculable, and capable of producing normal vaccine vesicles."

The appearance of vaccinal eruptions proves only that a foreign material is circulating in the blood of the affected individuals—the vaccine lymph. The eruptions of the second period must rather be attributed to the absorption of the contents of the pustules. (Behrend.)

Revaccination.—If carefully selected lymph, whether bovine or humanized, only were used; if every case of vaccination were carefully observed throughout, and repeated at the proper time if imperfect; if three or four distinct and sufficiently separated punctures had been made, it is probable that there would be less necessity for repeating the operation from time to time; it is probable, indeed, that the protective influence would continue during life in many cases. Revaccination may be necessary to supplement the original when imperfect, and to remove the susceptibility to the variolous poison which may have been reacquired. It is by a repetition of the vaccination only that the existence or absence of a susceptibility to small-pox can be determined. It follows that revaccination should be practised whenever the individual is exposed to the disease. In the absence of a special liability to contagion, there are certain periods when revaccination should be practised. These periods are: 1. After the second dentition; 2. After the period of puberty. To these should be added after the first dentition if but a single cicatrix remain, especially if not well foveated, and if faint. The influence of revaccination over the occurrence of small-pox is well exhibited in the statistics of armies. In the Bavarian army, compulsory revaccination since 1843 has been enforced. From that time to 1855 there had not been a single case of small-pox, and not a single death from the unmodified disease or varioloid. The returns of the French army are very striking. Before the year 1859, according to M. Levy (*Rapport sur les Progrès de L'Hygiène Militaire*, 1867), the ratio of deaths from variola and varioloid, per 1000 deaths from all causes, was thirty-nine. After new instructions from the Minister of War, requiring general revaccination, the proportion of deaths fell to 17.5 per 1000 deaths from all causes. This ratio was still further reduced so that, in the three years from 1863 to 1865 inclusive, it fell to 13.5 per 1000 deaths from all causes. In the Prussian army, since revaccination is enforced on all, epidemics of small-pox have ceased to occur. (Curschmann.)

Dr. Carpenter, the distinguished physiologist, has published some striking observations on the influence of vaccination amongst the civil population of England. "He shows that in the olden time, say from 1616 to 1780, the average mortality from small-pox was 4,483 per million; that with the discovery of vaccination, it fell to 2,040; with the provision of public vaccination, to 400, and under the compul-

sory vaccination system it had fallen to 276."¹ He showed further that the loss by death was but a part of the evil. Of those who escaped death, a considerable number were shockingly mutilated; he himself had seen 100 cases of blindness. In commenting on these statements, the *Lancet* further remarks, that "about 90 per cent. of persons in an unvaccinated community exposed to small-pox will catch it; from a third to a half would die, and the rest would be marked for life." And yet this is the state of society to which the bigoted opponents of vaccination would return.

The present epidemic of small-pox in this country means the neglect of vaccination, or its imperfect performance. A compulsory law, the provisions of which cannot be evaded, must be enforced in all the States, if epidemics are to be avoided. Unfortunately many foreigners, Germans especially, signalize their appreciation of their liberties by violent opposition to a measure enforced in their old homes by a vigorous and inflexible law. Others are content to be vaccinated by barbers, and no attention is paid to the source and characteristics of the virus. Revaccination is neglected. Until these abuses are reformed, epidemics of small-pox will recur from time to time, as new and unprotected material is produced.

[NOTE.—The writer of the foregoing has simply attempted to compile such facts as may be of interest at this time, when small-pox is so prevalent. He has not aimed at completeness, for a full account of the variolous diseases would take up a considerable volume. He wished more especially to lay before the readers of THE MEDICAL NEWS such points as may facilitate diagnosis, and clear up doubtful questions.—R. B.]

THE SURGICAL ASPECTS OF SMALL-POX.

By J. WILLIAM WHITE, M.D.,

DEMONSTRATOR OF SURGERY AND LECTURER ON OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA, SURGEON TO THE PHILADELPHIA HOSPITAL, LECTURER ON VENEREAL DISEASES IN THE UNIVERSITY, ETC.

THE complications of variola which are of especial surgical interest occur during the eruptive stage, or appear as sequelæ during or after the stage of desiccation. They are almost without exception attributable to the presence and local irritation of the pustules, to a depraved condition of the blood, or to actual septicæmia, or pyæmia.

A full consideration of the various conditions included under these heads would extend far beyond the prescribed limit of this article; but it may possibly be of advantage, in view of the prevalence of the disease, briefly to mention those which have been found, by reason either of their gravity or their frequency, to be of the greatest importance.

The pharyngitis and laryngitis, which to some extent are almost constant accompaniments of the early stages, assume in exceptional cases an acutely cedematous, a suppurative, or a diphtheritic form, which rapidly proves fatal. Trousseau records three cases, in which, at about the middle of the second week, death occurred from suffocation, and so sud-

¹ The Lancet, February 11, 1882.

denly that no assistance could be rendered. In one a pustular inflammation below the glottis was discovered; in another there was oedema of the ary-epiglottic folds, and a large abscess was found between the oesophagus and the larynx. In a child of twenty months, dyspnoea having necessitated tracheotomy, two false membranes were thrown out through the wound at the moment of opening the windpipe; and the autopsy revealed that the pseudo-membranous inflammation had extended to the larger bronchial tube. Rühle believes the essential peculiarity of the laryngeal affection to be a croupous or diphtheritic inflammation; and Mackenzie states that examples of this complication are to be found in the museums of St. Thomas's and St. Bartholomew's Hospitals. The histology of this complication is thus described by Cornil and Rauvier: "In confluent variola, the larynx, and, indeed, the mucous membranes of all the air-passages, are the seat of pustules more or less numerous. The pustules of the larynx have, generally speaking, the same form and evolution as those of the skin. When the pustules are very numerous, they unite into groups, and the epithelial layer, degenerating over an extended surface, forms a veritable false membrane, which, in certain cases, might be confounded with the false membrane of croup. After the shedding of the epithelium, the pustule continues to empty itself; the superficial layers of the mucous membranes may continue to suppurate; there is then formed an ulcer more or less deep and irregular." More severe inflammations, abscesses, and perichondritis have been observed towards the end of this process.

The treatment should consist, in the slighter cases, of astringent gargles, followed by scarification of the larynx, if oedema occur; in the more serious cases, where alarming suffocative attacks are met with, tracheotomy, at an early stage, offers the best, if not the only, chance for recovery.

The ophthalmia of small-pox, which is more destructive than that accompanying any of the other exanthemata, is usually confined to the lids and lachrymal apparatus during the eruptive stage, but may involve the cornea itself, or, more rarely, the other structures of the eye. The opinion that characteristic pustules form in these localities, though strongly opposed by some authors, still seems to be the prevalent one. A "secondary variolous ophthalmia" is described, occurring after complete desquamation, or even as late as the fifth or sixth week, and consisting of corneal abscess, followed by leucoma, or staphyloma.

Destructive inflammation of the bones of the nose has resulted from an extension of inflammation from the Schneiderian membrane, and profuse epistaxis, due to ulceration, has in a few instances either directly terminated the case, or has reduced the patient below the rallying point.

Particular attention should be paid to the condition of the tympanum, the middle ear, and the mastoid cells, as purulent otitis, followed by caries, has occurred. This complication, in young children, has been thought to cause death, and is undoubtedly capable of giving rise to coma, to convulsions, and to other grave symptoms.

Phlegmonous erysipelas of the scalp has proved fatal in a few cases, and, indeed, the association of profoundly vitiated blood with the intense irritation of the pustular dermatitis would seem to offer such favorable conditions for its development that its infrequency appears somewhat remarkable. It was, however, found to affect some portion of the body in forty-seven out of two hundred and eighty-seven cases recorded by Sargent in the *American Journal of Medical Sciences*, April, 1849.

A series of localized inflammations of subcutaneous cellular tissue, in the shape of furuncles, may follow the eruption; and in some reported cases there have been as many as eighty or a hundred boils upon the surface of the body at one time. Oftener they exist in smaller numbers, but follow each other in successive crops, extending over a period of months. This condition has been called a "furuncular diathesis," and is probably an evidence of a depraved state of the blood, which prevents healthy reparative action in regions more or less implicated in the profound dermatitis of the eruptive stage. A more dangerous form of extension of inflammation results in the production, during convalescence, of deep-seated abscesses, usually in the limbs. The progress towards health is interrupted by the usual symptoms of suppuration, rigors, fever, pains, etc.; and soon afterwards fluctuation develops often in the deeper muscular layers of the extremity involved. These collections of pus may occupy the ischio-rectal fossæ, and result in perineo-rectal fistulæ, or in extensive sloughing of the buttocks.

Oedema of the legs and feet is said to be rarer than in scarlatina, and more frequent than in measles.

At about the period of subsidence of the salivation, the dysphagia and the laryngitis, which occur soon after the appearance of the eruption, or, in other words, at a period corresponding to the height of the suppurative or secondary fever, we often have well-marked genito-urinary symptoms; intense ardor urinæ, vesical tenesmus, hæmaturia, orchitis, and acute hydrocele in the male, or ovaritis in the female. These complications have all been attributed to the occurrence of the eruption in the parts affected; but it seems probable, as the mucous membranes are, after the skin, the tissues pre-eminently involved in this disease, that the orchitis may often be, as usual, secondary to a urethritis.

That small-pox in its eruptive stage may, however, affect the serous membranes, as well as the skin and mucous tissues, was pointed out a century ago by Pedzholdt, who published his observations on variolous meningitis and peritonitis in 1832-1833. More recently—1859—M. Béraud called attention to these forms of orchitis and ovaritis, which affect not only the parenchyma of these organs, but involve the tunica vaginalis, producing the acute hydrocele above mentioned; or, by attacking the folds of peritoneum covering the ovaries, give rise to a circumscribed peritonitis.

Gangrene of the scrotum, or of the labia, has occasionally been seen, the loose, subcutaneous connective tissue of these parts, and their dependent position, favoring the rapid extension of the inflammation from the derm, and the arrest of the blood

current. Gangrene of parts exposed to pressure has also been noted very early in cases in which the blood was extensively altered.

Lymphangitis and buboes frequently occur during the acute stage, the inflammation of the glands often going on to suppuration, which, as in most similar cases, affects by preference the peri-glandular cellular tissue, but occasionally invades the structure of the gland itself.

Arthritis is a surgical accident of the secondary stage, which is far from uncommon. It belongs to the same class of joint affections as those occasionally complicating urethritis, lacerated wounds, puerperal fever, albuminuria, and scarlatina; but, like all the variolous inflammations, has an almost uncontrollable tendency to suppurative action, and, indeed, usually begins as a purulent synovitis. Extra-articular suppuration has occasionally followed, either by the extension of inflammation through the synovial membranes to the subcutaneous and capsular structures, or, as a result of purulent extravasation, from rupture of the synovial sac.

In such cases the patient will be left with sinuses discharging an ichorous fluid, with much limitation of the movements of the joint, and with a tendency to hectic, which may terminate the case fatally.

Periostitis, which is an occasional complication, shows the same tendency to suppuration, and is often followed by caries and necrosis either from the formation of a subperiosteal abscess, or as a result of a secondary osteitis. The latter condition is in exceptional cases the primary one.

Small-pox, like the other eruptive fevers, often so affects and interferes with the developmental processes of young children as to leave its impress upon the osseous tissues, predisposing to subsequent deformities or producing tardy or irregular growth.

In the dental structures this is easily noticed, teeth erupted during or soon after convalescence being marked with a series of parallel horizontal grooves, showing the failure of the nutritive supply during the period of the fever. These marks, of course, persist throughout life. It must not be forgotten, however, that, even if the variola occur some time before the eruption of the first permanent teeth—the sixth-year molars—that it may affect them and all those which follow. While the development of the temporary teeth is advancing, the germs of the second set are also progressing, and the occurrence of a stomatitis, such as small-pox invariably gives rise to, would of itself, exclusive of the general or systemic disturbance, be sufficient to interfere with the nutrition of the teeth, the blood-supply to which is at once vitiated and greatly diminished.

The necrosis of the maxillary bones, which sometimes occurs in children after the exanthemata, has been attributed by Mr. Salter to the influence of the fever poison upon the delicate tooth pulps, which, as dermal organs—portions of the tegumentary system—are especially affected by the diseases which chiefly attack this system.

Finally, septicæmia and pyæmia, followed by metastatic abscesses, occur during the *stadium maturationis*, and carry off a not inconsiderable por-

portion of patients. Ribes and Legallois have endeavored to show that the starting-point of the purulent infection in these cases is a capillary phlebitis, and, although this has not been conclusively demonstrated to exist in every instance, it seems exceedingly probable that it gives rise not only to many pyæmic manifestations, but also, through the production of embolism, to the sudden deaths which now and then occur during the height of the disease.

In the treatment of all these affections no deviation from ordinary surgical practice is required—abscesses should be opened when mature, local inflammations should be controlled in the usual manner, and gangrenous parts should be interfered with only after nature has entirely effected their separation. Treatment of special symptoms should, of course, be subservient to the general management of the case. A cardinal rule, however, is to avoid, under all circumstances, anything approaching systemic depletion, and to interfere surgically only when it becomes apparent that such intervention is necessary to save important structures, or life itself.

HOSPITAL NOTES.

THE PHILADELPHIA DENTAL COLLEGE.

HOSPITAL OF ORAL SURGERY.

RADICAL TREATMENT OF EPITHELIOMA.

(Service of JAS. E. GARRETSON, M.D.)

IN the treatment of epithelial cancer, Prof. Garretson urged as his experience that thorough removal of an affected part and its replacement by a flap brought from the greatest possible distance, had seemed to inaugurate a physiological change and arrest of development of the abnormal cells. Whether this was due, he said, to something approximating a condition which might be termed *force of example*, he would not at this time digress to consider, but would content himself with reference to the fact that for thirteen years he had practised the operation with satisfactory success on quite a large number of cases.¹

The disease in the patient upon whom he was about to operate involved both eyelids of the right side, extending down upon the cheek, the contents of the orbit, the internal and inferior bony floor, both nasal bones, the perpendicular lamella, and cribriform plate of the ethmoid bone, and the internal angular process of the frontal bone. The gravity of the condition was self-evident. That epithelioma so related could scarcely fail to quickly prove fatal, could not but be admitted by all who were present.

The patient was, however, as yet rugged, with the bloom of health, and without signs of cachexia. The danger attending such an operation as was required, was fully understood by the man, who was most desirous that the attempt be made to save him. Humanity's and the patient's sake both impelled the lecturer to undertake the operation, which he proposed should be the plastic one referred to, as it offered the only possible chance of life to the individual, while at the same time it was an extreme example to distinguish the promise and capability of the means of cure.

After etherization was completed a section was made over the frontal prominence and carried down the nose to the ala upon the right side; thence across that cheek

¹ See his *System of Oral Surgery*, also the last edition of Dr. Duhring's *Treatise on Diseases of the Skin*.

to the angle of the jaw, from whence back to the place of departure. The soft parts included in these boundaries were then dissected out, including the right eye and its appendages, and the bony parts previously mentioned were removed, as they proved upon examination to be involved in the disease. For this purpose the surgical engine armed with an oval burr was used, proving a most efficient and valuable machine, capable of the most delicate and trustworthy work. It was claimed that the burr was revolving at the rate of fifteen thousand times per minute, and yet the operator was exposing the olfactory bulbs of the brain.

The abnormal tissue being entirely removed and the severed arteries secured, the integuments across the temporo-zygomatic region were separated and dissected up slightly to beneath the ear, in order to form a wide groove along which the flap could be laid. A great flap with a pedicle of one and a half inch in width was now taken from the integuments beneath the right ear extending down to the scapula, being about seven inches in length, having an enlarged termination of some four inches across. This flap was then turned and stitched into the margins of the skin about the ablated parts.

Three days later a crucial incision was made into the part overlying the orbit and the four ears thus secured were worked around the circumference of the cavity and retained in their new position by a conical-shaped sponge compress supported by a monocular bandage.

Three days after the operation the patient was sitting up in his bed reading with his single eye.

MEDICAL PROGRESS.

ALCOHOLIC INTOXICATION.—In the blood of animals in a state of alcoholic intoxication a notable quantity of alcohol was found by Lallemand, Perrin, and Duroy. The method which they employed was to draw from the carotid artery a considerable quantity of blood, to distil this in a salt bath, and to redistil over quicklime. M. GRÉHANT has endeavored, by a modification of this process, to ascertain what proportion of alcohol in the blood is sufficient to produce and to maintain symptoms of intoxication. The value of the method and apparatus employed was first tested by examining with it definite mixtures of blood and alcohol, and it was ascertained that if pure blood was thus treated no trace of alcohol could be discovered in the distillate. Two hundred and thirty-one grammes of alcohol (21° strength) were administered to a dog in two doses, at an interval of half an hour. At the same time the animal was made to breathe through a flask containing absolute alcohol, in order to counteract the influence of pulmonary exhalation. At the end of an hour, one hundred litres of air having passed through the flask, sixty-eight cubic centimetres of blood were drawn from the femoral artery. They were found to contain .345 cubic centimetres of absolute alcohol, which corresponds to one part of alcohol in one hundred and ninety-seven of blood. This proportion, in the case of the animal experimented on, was sufficient to produce the most profound intoxication.—*Lancet*, Dec. 10, 1881.

HUNGARIAN EXPERIMENTS ON ANTHRAX.—At the last meeting of the Hungarian Natural Science Society, Dr. Rozsahegyi gave an account of some experiments on the prophylactic inoculation of anthrax, initiated by M. Pasteur. An attempt was made to communicate the disease to a series of inoculated sheep, and to others which had not been inoculated, and it was found that the death-rate in the latter was 93 per cent., in the former only 1.45 per cent. If, however, regard was paid not only to the deaths which resulted from the infection of anthrax, but also to the total mortality

from all causes during the experiments, this difference, was found to be somewhat less, the mortality among the inoculated animals being 14 per cent., and among the others 94 per cent. The large mortality in the protected animals from other causes than the subsequent infection seems to show that the process of inoculation is not itself free from considerable risk, either directly, or indirectly by rendering other diseases more fatal. Another point of importance raised, but not answered, is the question, Within what time may the flesh and milk of inoculated animals be regarded as free from all danger of conveying the disease to man?—*Lancet*, Jan. 14, 1882.

THE INTRA-UTERINE APPLICATION OF PERCHLORIDE OF IRON.—Dr. VON TEUDLEBEN (*Centbl. f. Gynäkol.*, No. 24) recommends, as obviating any danger that may arise from the use of injections into the uterus, the use of solid perchloride of iron made into sticks and kept in sealed glass tubes. These are to be introduced into the uterus inclosed in a perforated cannula, which must be moved freely about in the cavity. A few minutes suffice for the complete solution of the stick. He refers to Martin's perchloride pencils, which are compounded of the salt with glycerin and powdered althæa root, and are, therefore, in his opinion, not so useful as the ones described.—*Edinburgh Med. Journ.*, Jan., 1882.

RECURRING LETHARGY.—A remarkable case of lethargy is now to be seen at the Hospice-Général at Rouen. For twenty days a woman, thirty-seven years old, has been in a profound sleep, which is broken for a few moments each night, when she takes some food. The sleep is accompanied by general rigidity, so that the whole frame can be raised as one piece. Her first attack was fourteen years ago, and periods of lethargy have recurred since from time to time. During the intervals she seems perfectly well, and has been employed at the hospital as nurse. Just before the onset of an attack she becomes nervous and taciturn. The onset is always sudden; she goes to sleep in a moment, whatever she may be doing. During the lethargic state the face is well colored and warm, and respiration is regular, but there is, as stated, general muscular rigidity. About half-past ten each night the legs begin to tremble, slight groans are uttered, and are precursors of the brief nocturnal remission. At eleven o'clock she opens her eyes, sits up and eats what is given to her without speaking. Then she again puts her head on the pillow and goes to sleep, but the limbs are relaxed until about four o'clock in the morning, when the rigidity again comes on, and lasts until the following night. Twice she has slept continuously for ninety-six hours without taking food. She does not lose flesh. The long period during which these attacks have recurred, and the form of fixed, not cataleptic, rigidity, render the case unusual, even among the rare instances of lethargic trance.—*Lancet*, Jan. 7, 1882.

RHEUMATIC ŒDEMA.—Prof. POTAIN (*Journ. de Méd. Pratique*, Nov., 1881), draws attention to a form of œdema supervening under the influence of the rheumatismal diathesis, which is usually of favorable prognosis, but which at first sight might seem to be due to some serious affection, as disease of the heart or kidneys. This œdema is recognizable by its mobility, the good general condition, and the absence of any cause beyond antecedent or co-existing arthritic manifestations. It is marked by a peculiar consistency or hardness, as if the liquid remained confined within the cells. Sometimes these tumefactions become more localized, and then may be mistaken for tumors or collections of fluid. Rheumatic œdema indeed shows itself under

extremely variable appearances which may easily give rise to errors of diagnosis.—*Med. Times and Gaz.*, Feb. 11, 1882.

IODINE IN MALARIA.—In the *Maryland Medical Journal* for February 15, 1882, Dr. R. B. MORISON reports two hundred and fifty cases of malaria treated with tincture of iodine in fifteen minim doses, largely diluted, a quarter hour before meals. His cases show an even more favorable result than where cinchonidia is employed, and he states that iodine is now the routine treatment in all cases of acute malaria coming to the dispensary. Similar observations are reported in the *Indian Medical Gazette*, for January, by BABOO BROJENDRY NATH BAMERJEE at the meeting of the Calcutta Medical Society. He states that since 1878 he has made large use of this method of treatment, and in 1879 published in the *Calcutta Medical News* that he had cured ninety per cent. of five hundred cases. Since then, however, he has been led to distrust the reliability of his results, and believes that many of his earlier trials were made in cases which recover spontaneously, while others of these cases last, even under no treatment, only one day. Under such circumstances any drug will appear to act like magic. His present belief is that iodine will prove serviceable in about half the cases. The same author also reports cases in which *burnt alum* appeared to be of service.

ADDISON'S DISEASE.—An interesting contribution to the pathology of Addison's disease was brought by Dr. GOODHART before the last meeting of the Pathological Society, and gave rise to a still more interesting discussion. The cases briefly consisted in atrophy or complete disappearance of the supra-renal capsules, associated with all the clinical features of Addison's disease in a marked degree. It would appear, therefore, that the changes in the capsules which Addison and all subsequent writers have considered essential to the disease may, after all, be only one of several conditions capable of giving rise to this group of symptoms. Many facts were brought forward in support of this opinion. Dr. Goodhart himself was of opinion that such cases as these strongly suggested the view that changes in the abdominal sympathetic were the real source of the symptoms—a view which was traversed by Dr. Pye-Smith, who, after pointing out that the adrenals were obsolete organs in adult life, the removal or destruction of which in animals produced no effect, warned his hearers against the acceptance of this neurotic theory, on the ground of its extremely simple and seductive nature. He supplemented this by pointing out that pigmentation of the skin was very common, and that there was neither pathological nor physiological analogy in support of melasma being due to nerve-changes. Dr. Coupland was hardly prepared to accept Dr. Pye-Smith's views, and pointed out the striking analogy presented by the vomiting and pigmentation of pregnancy in support of disorder or implication of the abdominal sympathetic. He did not think that structural changes need necessarily be found in the nerve-ganglia themselves, although he had met with one notable example, where fibrosis with atrophy of cells existed. He expressed his belief that the changes in the supra-renal capsules were of the nature of a localized tuberculosis, which might take place without any symptoms of Addison's disease. Dr. C. Creighton, in regard to the function of these bodies, referred to the researches which had shown that the blood issuing from the capsules gave chemical reactions different from those which were obtained from blood entering them, and argued that changes, such as atrophy or caseation, which practically cut off the blood-supply, might lead to such alteration in the blood as would bring on pig-

mentation, while cancerous changes, which increased the circulation through the organs, would have no such effect. Finally, Dr. Fowler referred to a case of lymphadenoma in which the abdominal sympathetic was largely invaded, where the capsules were healthy, and in which all the symptoms of Addison's disease were present.—*Med. Times and Gaz.*, Feb. 11, 1882.

CICATRICAL OBLITERATION OF THE PYLORUS.—M. DUJARDIN BEAUMETZ communicated to the Société Médicale des Hôpitaux, on January 13, a curious instance of cicatricial obliteration of the pylorus in a mid-wife who had swallowed sulphuric acid six years previously. Since then the stomach had become enormously dilated, and it had been proposed to perform Billroth's operation of suturing a loop of intestine to the wall of the stomach, after having formed a communication between the two organs. Unfortunately the woman died before the operation was undertaken.—*Gaz. Méd. de Paris*, Feb. 4, 1882.

TESTS AS TO THE PURITY OF CHLOROFORM.—In the *Progrès Médicale*, Dec. 31, Dr. YVON refers to certain tests of the purity of chloroform published some time since by Prof. Regnaud, which the surgeon may resort to himself. These are: 1. The sweet odor of the chloroform. 2. It should not redden litmus-paper. 3. It should give no precipitate, nor even produce turbidity, when shaken with a solution of nitrate of silver. 4. It should not become colored when carried to a boiling-point with concentrated solution of caustic potash. 5. Sulphuric acid should not be blackened when brought in contact with chloroform. Other tests can only be practised by the chemist, such as the determination of the density and boiling-point; but Prof. Regnaud states that no chloroform can be regarded as pure which does not satisfy the above-named conditions. But, however pure chloroform may be, it is continually in danger of undergoing spontaneous changes, so that its purity requires verification from time to time; and when it is kept in a bottle incompletely filled, more or less imperfectly corked and exposed to the light, this is soon diminished. For the detection of the changed condition, even before it becomes dangerous, M. Yvon employs, as a test, permanganate of potash one part, caustic potash ten parts, and distilled water 300 parts by weight, which form a solution of a beautiful violet red. This, brought into contact with chloroform that has been rectified, does not change color; but if the rectification has been incomplete, it is more or less rapidly reduced, its reduction being preceded by a change of color to green. This permanganate in solution, therefore, supplies the *pharmacien* with a most delicate and rapid test of the purity of the chloroform furnished to him, and, employed from time to time, ascertains whether the original purity is still maintained.—*Med. Times and Gaz.*, Feb. 11, 1882.

PITYRIASIS.—Prof. HARDY recommends the following mixture in the treatment of pityriasis: Bicarbonate of soda, 20 grammes; arseniate of soda, 10 centigrammes; distilled water, 300 grammes. A spoonful to be taken before breakfast and dinner in the pityriasis rubra of gouty subjects, in disseminated pityriasis, and in pityriasis of the beard or hairy scalp—when the bicarbonate of soda given alone has proved inefficacious. For lymphatic subjects affected with obstinate pityriasis rubra of the armpits, groins, or neck, the arseniate of iron may be prescribed with good effect in doses of two or three centigrammes per diem. As a local application we may use ointments of oxide of zinc, and, later on, those of tar, of juniper, oil of cade (from a tenth to a twentieth), of calomel (from fifty to a hundred parts), or citron ointment mixed with ten parts of cold cream or lard.—*L'Union Méd.*, Jan. 21, 1882.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Editor's Address, No. 1004 Walnut St., Philadelphia.

SUBSCRIPTION PRICE, INCLUDING POSTAGE,

PER ANNUM, IN ADVANCE, \$5.00.
SINGLE COPIES, 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address, HENRY C. LEA'S SON & CO.,
Nos. 706 & 708 Sansom Street,
PHILADELPHIA, PA.

SATURDAY, MARCH 4, 1882.

THE SMALL-POX EPIDEMIC.

DURING the existence of the present small-pox epidemic we have kept our readers duly informed of its progress. So important is the subject, that we begin in the present issue a tolerably full account of the disease. We are sure that our efforts to illuminate the subject of the variolous diseases will be regarded as timely by our readers, who desire full information on current medical questions. We had intended to devote one issue wholly to variola—a small-pox number—but the pressure on our columns is such, that we can give a part of two numbers only to this topic.

NEPHROTOMY.

In an editorial in our issue of January 21, we called attention to the general matter of abdominal surgery. The surgery of the kidney is worthy, however, of more especial notice.

Two new terms have been recently added to our surgical nomenclature, which, though not yet always recognized by our surgical writers, are not only convenient, but exact, viz., Nephrotomy, to indicate a cutting operation on the kidney; and Nephrectomy, to indicate its total extirpation. While the latter is exclusively a modern operation, the former was recommended by Hippocrates, and was done in the seventeenth century by Marchetti on Mr. Hobson, the British Vice-Consul at Venice, and probably by the Paris faculty on an archer of Bagnolet. But it fell into entire oblivion until 1869, when, in a thoughtful paper, Mr. T. Smith recalled attention to it, and Mr. Annandale also declared in favor of operative interference. Mr. Bryant, in the

recent edition of his *Surgery*, though he has done the operation four times, cautiously says, that "it is probable that in a few years it will be recognized as an operation." But so long ago as 1878, Torres had collected one hundred and sixty-three cases of various operations on the kidney, and properly says, "at present a new period of action in renal surgery is opening. Nephrotomy and nephrectomy are among the orders of the day."

Nephrotomy may be called for by either renal calculus or renal abscess. Even if no stone be found, yet, in the apparent failures of Durham and Annandale, the patients have been so vastly relieved of their nephritic colic as to justify the operation in these cases, and to suggest its advisability in others.

The diagnosis of abscess, and, still more, of calculus, of the kidney is by no means always easy; yet, with our present means, it is rendered sufficiently certain in many—if not in most—cases to make an exploratory operation, at least, entirely justifiable and even imperative. Usually only one kidney will be affected. This may be so even as a result of stricture, as in the remarkable case of Mr. Puzey. The same case, as well as those of Mr. Dowse and of Prof. Simon, shows a sort of see-saw relation between the condition of the urine and the nephritic attacks. During the attacks the urine was normal; but so soon as the pressure of the accumulating pus was sufficient to force it into the bladder, the attack was relieved. Given, says Mr. Puzey, the state of the patient, and the character of the urine could be predicted; or, given the state of the urine, and the condition of the patient could be inferred. Such normal urine occurring during an attack is most important evidence of the soundness of the other kidney. Of course, in an abscess, the use of the aspirator would occur to any one; but Mr. Barker has pointed out an additional value it has in renal diagnosis. He used it in a case in which it was doubtful whether the disease was a new growth, tubercular infiltration, or a calculus. When the point had penetrated the skin the vacuum was produced in the needle, and he hoped that, in case of either of the first two conditions, to get enough tissue *débris* to enable him to diagnosticate its character microscopically, or, if a stone were present, he would obtain the evidence of its presence not only by the pus, but by the grating of the needle against it—a result in which, happily, he was not disappointed. If the introduction of the hand into the rectum be ever advisable, in such serious cases as these it would seem to be allowable, and might give most important information.

The dangers and difficulty of the operation are not great. It is practically a lumbar colotomy terminated in a slightly different manner. On reach-

ing the kidney no stone may be felt, and yet there may be, as in Simon's case, as many as eighteen or twenty. Puncture of the kidney by a needle is not only justifiable, but, as in Dawson's, Puzey's, and several other cases, the renal substance may even be cut to a considerable extent. Hæmorrhage, however, is much to be feared if this be done, unless the kidney be reduced to a sac. The use of Pacquelin's cautery knife may obviate to a large extent this danger.

Not uncommonly the stone, instead of being a simple, uniform body, like a urinary calculus, will be irregular, with branches extending into the calices of the kidney, and will be so imbedded in the pelvis as to require crushing and piecemeal removal—of which Le Dentu gives an excellent example. The existence of internal renal fistulæ, so far from being a contra-indication, is, as Simon has pointed out, a still stronger reason for doing it, in order to avoid their fatal results. Puzey, some time after the operation, was able even to catheterize the ureter down to the bladder.

The results of the operation are most encouraging. We lack yet the exact data as to the recoveries, but they are no doubt very largely in excess of the deaths, and the greater number not only recover from the operation, but are restored to perfect health without even lumbar fistulæ. The other kidney, as Torres has shown experimentally, undergoes compensatory hypertrophy, and the urinary function goes on undisturbed. If nothing be done, spontaneous recovery, according to Torres, follows in but one case in fourteen, or only about 7 per cent., a mortality far greater than that following nephrotomy.

THE PROPAGATION OF THE "FOOT AND MOUTH DISEASE."

THE recently published report of Dr. Charles P. Lyman, the veterinary surgeon sent to England by the Commissioner of Agriculture to investigate the "foot and mouth disease" in exported American cattle, impresses us much by the author's carefulness and success. That it was a serious matter will appear when it is considered that about twenty-eight hundred American cattle were condemned and slaughtered from January to June last.

Dr. Lyman first traced the cattle from their very stables in the West to the vessels; found them free from disease on embarkation; and found that the disease broke out usually in the ocean transit between this country and England. Then he investigated the vessels and cargoes, thinking that they might be the sources of contagion, especially as hides, skins, and wool, were often among the freight, but he could discover no connection between them.

But still more careful investigation showed that the "head-ropes" fastened to the horns of the ani-

mals to secure them in their stalls were frequently sent back from the lairs in England to be used again with the next lot of cattle, and that these clearly carried the infection. For instance, the "Iowa" left Liverpool April 12, with four bundles of such "head-ropes" among her cargo. She left Boston April 30 with eight hundred and forty-nine cattle all healthy, until May 7, four days before she reached Liverpool, when the "foot and mouth disease" broke out, and on her arrival on the 11th six hundred and forty-nine of the cattle were condemned. She had never carried any live stock from England to America. Dr. Lyman recommends the clear and simple remedy of prohibition by law of all such re-importation of "head-ropes."

Such methodical work, whether in diseases of man or animals, will not only do great good but reflects credit upon the man that does it.

CONSULTATIONS WITH IRREGULAR PRACTITIONERS.

THE new Code of Ethics adopted by the New York State Medical Society, has called forth the unqualified approval of the secular press. Our lay contemporaries have never understood the position of the medical profession on their relations to irregular practice in all its varied forms. It is always assumed that there is a quarrel over a dogma—that it is allopathy *vs.* homœopathy—that the latter is a new form of medical belief, a protest against the ancient medical delusions. They hold that the medical profession (the "allopaths") are actuated by jealousy and bigotry, and cannot be persuaded that there is a principle involved. They do not comprehend the fact that medicine is not a dogma, and that it has the same position as the other experimental sciences. If a physician, therefore, adopts the dogma of *similia similibus*, he ceases to be in relation to medical science. If he assumes that dogma to be true, he cannot associate with those who pursue medicine in the scientific spirit. With the dogma of *similars* are connected many visionary notions, which the physician, as a scientific man, must reject. There can be no comparison of views, no harmonizing of opinions, as between a homœopathist and a physician, for the former practises on a theory and employs a method of treatment, which the latter regards as folly or dishonesty. If a doctor announces himself an eclectic, or a homœopathic, or an allopathic, or a physio-medical, or a botanical physician, he assumes a special designation which implies the possession of some special resources, not used nor in the possession of other practitioners, which is untrue. Furthermore, this special designation is a mere pretext to obtain practice in many cases, the doctor so employing it not adhering to its methods. Sailing under false colors is a kind of dishonesty which all condemn. To recognize such

as associates, and to meet them in consultation, is to approve of their tactics, and to condone their offences.

The folly of a consultation between a regular physician, a homœopathist, and a botanical doctor, may be illustrated by an example. Suppose the case were one of violent cholera morbus, the regular physician would propose to cure promptly by the hypodermatic injection of morphia, the homœopathist would advise the third to the thirtieth dilution of veratrum, and the botanical doctor would urge No. 6. It would be simply impossible to reconcile the conflicting opinions, and the consultation would consist in the assertion of their respective principles.

The medical profession, having nothing in common with the advocates of "systems," must necessarily pursue its present course, and have no relations or consultations with them. The bigotry and intolerance of which they are so freely accused, belong to those who pursue an antiquated dogma to the exclusion of modern scientific methods. If all branches (so-called) of the medical art would unite, let the irregular practitioners abandon their trade insignia, and prepare themselves to become physicians. When they do so, and pursue medicine in the true spirit of an experimental science, differences will disappear, and then consultations will become conferences for the benefit of the sick, and not, as now, impracticable for want of a common ground of action.

It was a grievous error on the part of those gentlemen who were active in creating the new code of ethics, to suppose that homœopathists were desirous of dropping their special designation. Why should they do so? They announce themselves as homœopathists, ostentatiously, because this is the shibboleth which attracts business. All who have any opportunity of observing their methods, learn that very few indeed practise homœopathically. If they were governed by conscientious motives, they could easily relinquish homœopathy, and, after a proper training, enter the ranks of legitimate medicine; but doing so, would compel them to relinquish their one claim to popular sympathy and support. It is not surprising that they are prepared to snub the advocates of the new code, and to reject with derision the overtures for the unnatural reconciliation.

The resolution lately adopted by the Royal College of Physicians of London, on the subject of consultation with irregular practitioners, we have recently seen alluded to as if by the terms of this resolution all restrictions were removed. This is a singular and unwarranted perversion of the meaning of this resolution, and of the feelings prompt-

ing its introduction and passage. The resolution expressly condemns consultation with those who "trade on some special designation," and it was passed in compliance with the sentiment of the medical profession in England, who had been deeply stirred by two addresses advocating the removal of the present restrictions made at the Ryde meeting of the British Medical Association. It was to little purpose that Dr. Bristowe and Mr. Hutchinson expended their breath; no proposal could be more universally condemned than was theirs, to have the medical practitioners of England abandon their well-founded hostility to all forms of irregular practice.

THE SURGERY OF CYSTS OF THE PANCREAS.

THE deep position of the pancreas, the extreme rarity of its diseases, and the difficulty attendant upon their discrimination, render any information upon its lesions and their management exceptionally valuable. Bécourt and Douponchel have described cysts of this organ as large as a child's head; but it is only within the past year that this class of tumors has attracted the attention of the operative surgeon. Kulenhampff, of Bremen, records the case of a man thirty-nine years of age, in whom, at the end of two months, as the result of severe blows upon the belly, received in hoisting a heavy kettle, a tumor made its appearance in the epigastrium. An exploratory incision was made on the 14th of September, 1881, and a few ounces of fluid, which proved to be pancreatic on chemical examination, were withdrawn with an aspirator. Six days subsequently, the abdomen was again opened, the peritoneum was united to the incision, and antiseptic gauze inserted into the belly with the view of exciting adhesion between the sac and the walls of the abdomen. The object having been accomplished in four days, the cyst was laid open, a litre of fluid evacuated, a tent inserted, and antiseptic dressings applied. During the next sixteen days fluid constantly escaped in gradually diminishing quantities, the tumor disappeared, and a fistulous track remained, which, under the application of tincture of iodine and nitrate of silver, had completely closed on the 30th of October. The operator alludes to a case in the hands of Thiersch, in which a cyst of spontaneous origin, and supposed to be connected with the tail of the pancreas, was opened and three litres of chocolate-colored fluid evacuated. The patient recovered, but a fistule remained.

In addition to the foregoing cases, two examples of the removal of cysts of the pancreas, being the only ones of the kind on record, were reported by Rokitsansky, of Vienna, and Boze-man, of New York, both of which were mistaken for ovarian tumors. The case of Rokitsansky oc-

curred in a woman, thirty-six years of age, who had suffered with signs of ovarian dropsy for nearly three years. On the 27th of February, 1881, the usual incision was made, and the cyst was found to be extensively adherent to the omentum, stomach, descending and transverse colon, the latter of which was torn to the extent of two centimetres; but the rupture was closed with five sutures. During the separation of the adhesions fifty vessels were ligated, the sac was lacerated, and the patient nearly died on the table. The greater portion of the sac was left in situ, and the outer wound closed. On death from suppurative peritonitis on the tenth day, the cyst was found to be connected with the tail of the pancreas.

The patient of Bozeman was forty-one years of age, and the disease was observed five years before the operation, which was performed on the 19th of November, 1881. After the greater portion of the fluid had been drawn off, and the attachments to the transverse mesocolon had been severed, the enlarged and tortuous splenic vein came into view, as it rested upon the pedicle of the cyst, which was three-quarters of an inch long and broad, and attached to the tail of the pancreas. This was ligated, and the operation was concluded in the usual way. The tumor, with its contents, weighed twenty-one pounds and a half. Not a single vessel required a ligature. The patient was discharged cured on the thirty-eighth day.

It seems that in New York State there is a law requiring employers to provide seats for their saleswomen, to use when not engaged with customers. We should be very glad to learn that such a law was passed in every State. It is cruelty itself to expect women to stand up all day, as practically has been the case in some stores we know, a furtive rest on box or counter being the only relief. Even if well and strong, it would be hard, but when ailing, or when menstruating, women especially need rest. We observe that suit has been begun in New York City against seven prominent merchants to enforce the law. Whether these particular firms are at fault we do not know, nor is it material. Attention is called to the matter publicly, the existence of the law is made known, and much good we doubt not will be done—not only to women we hope, but also to men.

The matter of a reasonable time for a mid-day lunch, too, is of no little importance to working men and women. It is a difficult thing to arrange all such matters, in view of the imperfections of employers and employées, but that it can be done the testimony of Ehrich Brothers conclusively shows. We commend their honorable course, as stated to the *Tribune* reporter, to other employers, not doubting that the result will be satisfactory to both parties.

AS THE result of the discussion upon the great question of the removal of refuse matters from the vicinity of habitations, which has been actively going on for a number of years past, the conclusion has been well established that the water-carriage system is unquestionably the best adapted to the needs of cities and large towns, provided that certain conditions with regard to the construction and management of sewers be faithfully observed. The main points to be insisted on are—that the sewers should in the first place be well-constructed, they should be made water-tight, and as small as possible, so that they may be, in a measure, self-cleansing and properly flushed at stated intervals, and they should be well ventilated. The surface water should be made to go direct into the river; for if allowed to mix with the sewage it would necessitate an increase in the capacity of the sewers far above their ordinary requirements, and this fact alone would be very disadvantageous; and, moreover, it would entail an increased difficulty and expense in the treatment of the sewage at the outfall.

How many American cities can boast of the possession of a system of sewerage which meets all or any of these plain and simple requirements, is a question which, it is feared, cannot be answered without a profound sense of shame because of grievous shortcomings.

On January 8, a sermon was delivered at St. Barnabas Church, by the Rev. Richard Hill, M.A., on the subject of "Scientific Experiments on Organic Life—a Necessity, no Sin." Seats were reserved for the medical faculty, and, it is to be hoped, they were well filled.

If discourses upon such topics from similar points of view were more frequent, the profession would probably avail itself less of what is spoken of by a recent English writer as "the well-established medical privilege of remaining away from church."

In another column we give a brief *résumé* of the first annual report of the Thermometric Bureau of the Winchester Observatory, at New Haven. We feel a pleasure in the fact that Yale College has taken the initiative in this country in establishing such a service. Untested instruments, as the report shows, are so utterly unreliable that no medical man should be willing to trust them. Instruments of precision are worse than useless when they lack the first requisite which their name implies—precision.

It is an interesting fact, that in some cases of locomotor ataxia, pilocarpine has apparently much alleviated the pains, and improved the condition of patients otherwise. Dr. Jennings reports a case so benefited and Prof. Ball and M. Jules Simon have

communicated other examples to the same effect. The new remedy deserves further attention.

"WHAT constitutes a State? Men who their duties know, and sovereign law." This was Sir William Jones's opinion, and he may have been right, but we doubt whether our esteemed contemporary, the *British Medical Journal*, can with impunity observe that "Wilmington and Delaware also rank among the towns supplied with polluted water." From observed peculiarities of the Delawareans, it seems probable that they have long been familiar with the inferior character of their drinking water, but the reflection on the size of their State will doubtless result in the withdrawal of the entire Delaware patronage from the B. M. J., which should remember that "the *smallest* worm will turn being trodden on."

REVIEWS.

MINOR SURGICAL GYNECOLOGY. A Manual of Uterine Diagnosis and the lesser Technicalities of Gynecological Practice, for the Use of the Advanced Student and General Practitioner. By PAUL F. MUNDÉ, M. D., Professor of Gynecology in Dartmouth Medical College, etc., 8vo., pp. 381. New York: Wm. Wood & Co., 1880.

In *Our Mutual Friend*, Mr. Dickens describes the despair of the newly married Bella Wilfer, at the absurd directions of the cook-book: "Take a Salamander" or "throw in a handful of some unattainable substance;" and in a similar way the beginner in gynecology, away from the precise and definite ocular demonstration of the schools of to-day, must often feel bewildered about just how to do very simple matters, how to introduce a sponge-tent, how to wrap a probe with cotton, etc. We confess that after having wrapped many probes with cotton we still learned something valuable about it from reading Dr. Mundé's book.

The book fills a real space—meets a real want—really tells us how to do things, not simply when to do them, or to do them, but carefully, diffusely even, describes everything; for instance, just how a woman steps upon the gynecologist's table, and just how likely she is to shrink from doing it. The three hundred illustrations are necessary in such a work. Does a writer say, "Use Heburn's modification of Sims's speculum?" there on the page is its "counterfeit presentment." Does the practitioner wonder how to evert the rectum? turn to page 56, and see a finger everting it; the operator being evidently inside the patient, or else having taken her rectum into another room so as to evert it quietly. Does he shudder in perplexity about how to introduce his finger into the vagina, or in the stilted medical phraseology of the day to "practise indagation?" there on page 42 is a hand, in the attitude of a full-cocked Colt's revolver, pointing into space. All he has to do is to point his hand similarly, and slowly advance. Does he wonder how a woman looks on Dr. Chadwick's table? on page 28 he will see all he should, and probably more; and in many of the illustrations not only does one look at the human form divine, but gifted as it were with some magic power, one sees within the solid flesh the still more solid bone.

The wood-cuts are generally good, except the two remarkable ones, not original, on pages 78 and 79,

which might be appropriately named "Clinging to the Rock," and "Afloat on a Dining-Table," but which are called respectively the correct and incorrect positions for examining with Sims's speculum.

The arrangement of Dr. Mundé's book is such as to facilitate reference. Part I., on Gynecological Examinations, embraces Verbal Examination, Methods of Local Examination, Positions for and Couches for Examination, and Examination without and by means of Instruments. Part II., on Minor Gynecological Manipulations and Applications, contains Catheterization, Dilatation of the Urethra, Injections of the Bladder, Applications of Medicinal Agents to Vagina and Cervix, Vaginal Tamponade, Applications to the Endometrium, Dilatation of Uterus, Curetting Uterine Cavity, Local Depletion, Injections into Cervix, Reposition of Displaced Uterus and Ovaries, Pessaries, Artificial Impregnation, Massage, Hypodermic Injection of Ergot, and the Gynecological Armamentarium.

It will be seen at a glance that the field is extensive, and it is admirably occupied by the author. Where verbal description is wanted, we find it full and clear. Where illustration would assist, it is apt. There appear to us to be very few topics neglected, and very few errors. The author seldom dogmatizes, but states the many ways of doing a thing without comment, only occasionally pausing to discourage the use of certain procedures, or to limit their applicability. We can scarcely imagine a more useful book of its kind, written as it is to find favor not only with the beginner, who knows nothing, but the practitioner of years who would willingly know more; and if the latter be disposed to cavil at times at its prolixity about details with which he himself is perfectly familiar, he must remember that it is on just such simple matters that the novice needs enlightenment, the book being both a primer and an encyclopædia of gynecological knowledge.

SOCIETY PROCEEDINGS.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, February 17, 1882.

GEORGE ROSS, A.M., M.D., PRESIDENT, IN THE CHAIR.

DR. OSLER showed a series of specimens illustrating certain points in the pathology of atheroma of vessels.

1. *Atheromatous Plate and Ulcers on Arch of Aorta.*

—The specimen was taken from a man æt. sixty-five, who died in the General Hospital about ten days after fracturing the head of the left femur. The death was somewhat sudden and unexpected. The friends would not permit the head to be opened. Nothing of special moment was found in the viscera; fat emboli were suspected, but none were found on careful examination of the lungs. The heart was normal; valves a little stiff. The anterior wall of the arch presented a flat plate, about ten by six cm., and from three to four times the thickness of the rest of the tube. The intima over this area was opaque, and presented irregular prominences. At one point, two cm. in front of innominate, there was an oval loss of substance eight by four mm., which led into a small atheromatous abscess, the contents of which had in great part escaped. The increased thickness of the wall was due to a layer of brownish-yellow firm caseous matter between the intima and media; in places this was five to six mm. in diameter; it was nowhere calcified. There was another spot of softening in it, which had not burst into the tube, but was separated by a thin brownish membrane. On squeezing from the outer side, a puriform fluid escaped. There were a few small spots of atheroma in the descending aorta. No satisfactory cause of death was found, and it seemed scarcely

likely that the bursting of such a small abscess would produce immediate death. Unfortunately, the mode of death was not known, as the patient was found dead by the night-nurse. Such a spot might form the starting-point of an aneurism, as in the next specimen. Whether any symptoms follow this condition, is not positively known; we certainly meet with these ulcers in many cases which, during life, have not afforded any evidence of their presence.

Dr. GIRDWOOD thought it not improbable that the bursting of the abscess, and discharge of its contents, caused death, though, of course, it was impossible to say in the absence of an examination of the brain. He asked whether there was a murmur. Dr. Osler could not say.

2. *Atheromatous Abscess and Aneurism of the Right Iliac Artery. General Atheroma.*—The case was that of an old woman, who died of cancer of the cardiac end of the stomach. She had dry gangrene of the toes of the right foot. The heart was in a state of brown atrophy, and the valves were stiff. The aorta presented numerous calcareous plates, and towards the bifurcation was firm and rigid. The intima had many smooth, brownish-yellow calcified patches, and there were four or five small atheromatous abscesses. The right iliac, at its origin, presented a firm, elastic tumor, the size of a walnut, which almost obliterated the lumen. When the vessel was opened, the tumor was seen to be an aneurismal sac, communicating by a small orifice, which was blocked with adherent clots. On section the sac was found filled with reddish thrombi in the lower, and pulpy atheromatous matter at the upper part. It was evidently a small atheromatous abscess converted into an aneurismal sac. The external iliac and femoral, with its branches, were removed, and the walls found to be thickened, and in places calcified. Near the popliteal, the lumen was greatly reduced, and an adherent thrombus almost obliterated the vessel. In several spots the calcified intima was elevated by a quantity of pulpy atheroma beneath it.

In connection with this specimen a microscopical section was shown of obliterating arteritis of the anterior tibial in a case of dry gangrene in an old man.

3. *Bizzozero's New (?) Blood Element and its relation to Thrombus Formation.*—In the case of extensive cancer of stomach in an old man there was an extraordinary condition of the aorta just above the bifurcation. There was tolerably advanced atheroma of the entire intima, patchy and in places calcified. Just above the bifurcation there was a grayish-white, irregular mass, five by three cm., somewhat flattened but projecting about one cm. from the intima, to which it was closely united. In the abdominal aorta there were six or eight smaller spots of a similar character attached to localized area of atheroma. The appearance when fresh was very suggestive of a neoplasm, and they were thought at first to be a secondary cancerous mass. On examination the large spot was found to be composed of closely set, small, colorless bodies, about one-third or one-fourth the size of red blood corpuscles, discoid, and with a uniform grayish stroma. They appeared to be identical with the individual elements of Schultze's *granule masses*, which are so common in the blood of some individuals. In Dr. Wood's case of aneurism (*vide infra*) the gray filaments on the walls were made up of precisely the same elements. A few colorless corpuscles and some fibrin fibrils also existed, but they were in trifling amount compared with the small elements. Dr. Osler remarked that these were the little bodies recently described by Prof. Bizzozero, of Turin, as a new blood element. But they had in reality long been known, having been described by Schultze in 1861. They occur in the drawn blood in the form of granular clumps, but he (Dr. O.), had shown, in

a communication to the Royal Society, in 1874, that in the circulating blood the individual elements of the masses were isolated, and in the form of small discoids; a plate was passed round illustrating them as seen in the subcutaneous vessels of the young rat, which was the most favorable animal for the study of these bodies. In the case under consideration, these elements had apparently collected on an extensive area of atheroma, and had either multiplied there, or the mass had been formed by their gradual accretion. Bizzozero regards them as having an important influence on the development of fibrin (*Centralblatt f. d. Med. Wissenschaften*, Jan. 14, 1882).

Dr. OSLER presented the following specimens in comparative pathology:

1. *Bronchitis in a Calf—Purulent Bronchiectasy.*—The specimen was taken from a Galloway calf three months old, never very strong, and which had been troubled with a severe cough for over two months, and had become much emaciated. There was irregular fever, never more than 2° above the normal.

At the *post mortem*, the anterior lobes of both lungs were dark-colored, airless, and presented a remarkable condition of uniform distention of all the bronchi, with thick, tenacious pus. Even the finer tubes were dilated, and presented, beneath the pleura, a dendritic outline, with here and there a sacculated appearance. The intervening lung-tissue was of dark-red color, and collapsed. A section looked as if the tissue was thickly studded with small abscesses, but each one was only a distended bronchus, and with the probe-pointed scissors could be slit up to its farthest ramifications. There were no caseous masses, or areas of general solidification of the lung. The affection was most marked in the dependent parts of the lobes, the upper regions being free.

The thick creamy contents consisted of closely aggregated pus-cells, fatty *débris*, and a few epithelial elements. No trace of any strongyles. Microscopical sections showed the bronchial tubes thickened, infiltrated, and in many places the adjacent air-cells were filled with inflammatory products. Dr. Osler remarked that such a state of general distention of the bronchi might have been produced by a severe bronchitis in a delicate young animal, the copious secretion gravitating to the dependent parts. This appeared to be much more frequently the case in animals than in man.

2. *Glanders.*—The split head of a horse, showing the nasal fossæ and sinuses. The horse had been ill for several months, but was in pretty good condition, but had a chronic muco-purulent discharge from the nostrils. The specimen showed, (1) numerous ulcers, large and small, many of which could be seen from the external orifices. (2) Glanders tubercles in the form of isolated neoplasms on the Schneiderian membrane. They were thickly set in the upper part of the septum, and some were as large as beans. Many had begun to soften. (3) Diffuse infiltration of the mucosa with a grayish material; this was most evident in the frontal sinuses and in the antra, but it existed more or less over the turbinated bones. (4) Stellate cicatrices of healed ulcers. The trachea presented numerous nodules and a few ulcers, and the lungs contained some of the specific nodules of the disease. Liver, spleen, and kidneys were healthy. The cervical lymph glands were much swollen, and contained a few nodules. There was no cutaneous glanders (*farcy*).

Dr. GURD asked with reference to its degree of communicability, and whether many cases in man had been met with here.

The PRESIDENT believed that the liability of man to contagion from this disease was somewhat overrated; at least, there were many cases of glanders in horses, and yet instances of infection of grooms and others

were very rare. He had only seen one case, that of a groom who had taken charge of several glandered animals on board of a river steamer. The stench from them was very great, and he took the affection by inhalation of the poison.

Verminous Aneurism.—Portion of the arteria colica of a horse showing a small aneurismal dilatation, the size of an almond; the walls, thickened, covered with adherent thrombi, among which were five or six specimens of the *strongylus armatus*, or palisade worm. The parasite bores its way from the intestine, and penetrating the arteries, excites arteritis, with weakness of the wall, and dilatation and thrombosis in the lining membrane. It is a common affection in horses, and, according to Bollinger, is the most frequent cause of colic in these animals. He states that of one hundred horses afflicted with internal disease, forty are ill with colic; of any hundred diseased horses, forty have perished from colic; and among one hundred colic patients, eighty-seven recover, and thirteen die. No epizootic or sporadic affection in horses is so common, or has so many victims.

Aneurism of Thoracic Aorta; Perforation of Œsophagus.—Dr. C. A. WOOD narrated the case. A woman aged fifty-five had been ailing for some days with dyspeptic symptoms. One night, on going to stool, she complained of feeling sick, but did not vomit; fell over and died in a few minutes. There had not been any apprehension of serious trouble, and nothing special had been elicited on examination of chest and abdomen. The *autopsy*, by Dr. Osler, revealed a large coagulum in the stomach, forming a mould of the organ. No source of the bleeding was detected until the œsophagus was dissected, when a small aneurismal tumor, the size of a billiard ball, was found between it and the aorta, about two inches above the cardia. The aorta presented in the lower thoracic portion a small punched-out orifice, the size of a five-cent piece, with a narrow zone of thickened translucent intima about it. This led directly into a small saccular dilatation of the *intima*, not larger than a marble, which had ruptures, and formed the main sac, spheroidal in shape, with walls composed of thickened *media* and *adventitia*. It contained fresh clots and thin mural thrombi; the perforation into the œsophagus was by a small orifice, which was plugged with clot. On the thrombi lining the sac there were curious branched thread-like filaments, strikingly marked against the dark-red background. These were composed of minute spherical bodies, identical with those found in the thrombus in the aorta of the case just described. There was no heart disease, and the aorta was not atheromatous, except in the zone just about the orifice. The trouble had probably originated in a localized atheromatous process, with softening, rupture, and subsequent dilatation. The case presented an additional feature of interest, inasmuch as the woman had been under observation four years before with symptoms of acute phthisis, but had, unexpectedly, made a complete recovery. The upper half of the right lung was firm, and contained much fibroid tissue, with several bronchiectatic cavities.

Dr. GIRDWOOD remarked on the latency of many cases of aneurism and the varied symptoms produced by irritation or pressure. He narrated a case in point in which digestive troubles were for a long time the most prominent feature in a case of abdominal aneurism.

Dr. MILLS asked if there was any difficulty in swallowing, and suggested that auscultation of the œsophagus might have given some information in such a case.

Dr. WOOD stated that he had made a most careful examination, and had not been able to detect any abnormal physical signs in either chest or abdomen. He had not auscultated the gullet.

Ammonia Poisoning.—Dr. ARTHUR A. BROWNE related the case, and presented the stomach and œsophagus. The patient, a man aged fifty-five, had been in the habit of taking bromide of potassium after drinking bouts. His bottle was accidentally filled with strong liquor ammoniæ, and he gulped down a mouthful directly from it. Great pain was at once experienced, and bleeding from the stomach came on, and was profuse for about twelve hours. The vomiting was frequent, but after the bleeding ceased it only recurred when food of any kind was taken. The patient lived four days, and was sensible to the end. There was very slight affection of the mouth and fauces; not much tenderness over stomach; but the chief pain was referred to the chest. The amount swallowed could not be definitely determined. The *autopsy* showed great engorgement of the tissues in the course of the œsophagus and about the fundus of the stomach. The mucosa of the fauces and gullet was of a deep yellow-brown color, looking dry and burnt. The cardiac end of the stomach and a patch at the fundus were chiefly affected; the mucous membrane was greatly swollen, dark-yellow in color, and in places looked sloughy. There was deep congestion of the submucous and muscular layers in this region. The rest of the surface was unaffected. The epiglottis and larynx were injected, but the mucosa was not burnt.

The PRESIDENT said that he had been called to see this case shortly after the accident, and had seen the patient on several occasions with Dr. Browne. The points which struck him as most peculiar were the absence of laryngeal symptoms and the persistent pain in the chest.

Dr. GIRDWOOD suggested that the greater affection of the fundus was due to the great volatility of the poison. In an instance of poisoning with caustic potash the pyloric end of the organ was chiefly involved, and a stricture occurred of which the patient died.

Clonic Spasm of the Psoas Muscle.—Dr. LAPHORN SMITH exhibited a woman, aged thirty, with what he considered to be clonic contractions of the psoas and perhaps iliacus muscles of the left side. There were strong pulsations in the left inguinal and lumbar regions, fairly regular in rhythm, but varying in rapidity between ninety to one hundred and fifty in the minute and not synchronous with the pulse. They could be felt best when the patient was sitting on her haunches with the abdominal muscles relaxed. Pressure increased the force of the contraction, but the firmest possible compression controlled it. The movement began at the lumbar vertebra and could be traced to the lesser trochanter of the femur. When acting strongly, a forcible, shock-like impulse was communicated to the hand. The side of the body was jarred and moved with each contraction. When recumbent, the left leg was moved but not flexed. The patient was hysterical and had been the subject of this affection for over eight years. Dr. Smith believes the contractions to be due to nerve discharges from unstable cell elements in a localized spot of the spinal cord.

Dr. GIRDWOOD suggested that the contraction might be in the abdominal muscles. The patient was examined by the members, most of whom agreed with Dr. Smith as to the site of the contraction.

Medico-legal Case.—Dr. GIRDWOOD read a paper on the Plantagenet murder case, in which David Prevost and Damage Brunet were arraigned for the murder of Pierre Brunet. The facts were briefly as follows: The murdered man, aged eighty-one, but strong and active, lived alone, his nearest neighbors being his second wife and a step-son, who lived together on a lot which he had given the son, on the condition of an annual payment of twenty dollars. On the death of the old man the land would be free of encumbrance. Damage Brunet

had repeatedly tried to sell the lot, but the accrued tax interfered. On Monday, September 20, 1880, the old man was last seen going towards a bush, one and a half miles distant from his house, where he was engaged in clearing. On Wednesday he was missed and a search was made, but the body was not found until three weeks after. It lay in a field, near where he was working, covered with twigs, the pockets turned inside out, and the contents gone. Decomposition was far advanced, and the head separated on attempting to move the body. About the time of the murder, David Prevost went to the shanties lumbering, but while there he behaved so strangely, talking of some dreadful deed which he had committed, and asking the men to pray with him, that he was sent home, where, shortly after, he was imprisoned for larceny. He then confessed that he and Damage Brunet had murdered the old man, having strangled him in his house and carried him to the field where he was found.

The points of interest chiefly dwelt upon by the author were the advanced state of decomposition in the short space of three weeks, and the plea of insanity raised in the case of David Prevost, who was uneducated and of a low, revolting type of countenance. There was no apparent motive why he should have committed the deed, other than the solicitation of his friend, and, perhaps, the gift of a small sum of money. Dr. Girdwood raised the question of his knowledge of the illegality of the act, and maintained that to constitute legal responsibility, there should be a knowledge of the illegality of the act. He argued that in the public schools instruction should be given concerning the different crimes, and the punishments attached to them.

Owing to the lateness of the hour, the discussion was postponed until the next meeting.

CORRESPONDENCE.

THE CULTIVATION OF MICROPHYTES AS BEARING UPON THE DOMESTIC ORIGIN OF YELLOW FEVER.

To the Editor of THE MEDICAL NEWS:

SIR: In a report to the Surgeon-General of the army upon the yellow fever epidemic of 1876, in Savannah, parts of which were published in the *American Journal of the Medical Sciences*, July, 1877, I expressed the belief that that particular outbreak was of domestic origin. This judgment I reached in opposition to my preconceived opinions, from considering what appeared to be facts irrespective of hypotheses. The contrary view was maintained by many—I may say by most—including respectable authorities; and stress was laid, sometimes by expression and sometimes by implication, upon the antagonism of my opinion with the prevalent belief in the germ theory of the origin of disease. The drift of feeling was that, the germ theory being probably true and not admitting within its provisions apparently spontaneous outbreaks, my observations were either inexact in themselves or incomplete as a series. I do not rehearse this to reopen a discussion on the Savannah epidemic. At this date no new facts properly authenticated can be produced, nor is it probable that believers in either view will change their minds as to what was the case in 1876. But I do think it important to invite attention to indications confirmatory of what I have expressed.

In a paper¹ that was read before the American Public Health Association, November 20, 1879, this reply was presented to those who, on hypothetical grounds, deny that a domestic origin may be attributed to yellow fever:

¹ "May not Yellow Fever Originate in the United States?" Public Health Reports and Papers, Vol. v., p. 105.

"But the germ theory in its integrity does not compel belief in an infinitely extended ancestry of germs, each identical with its predecessor and its successor, and each capable of exciting some specific disease immediately upon the victim coming within its range. With more confidence we may imagine an infinite variety of self-propagating germs, each set of which may gradually yield to adjacent influences, as is conspicuous in the cultivation of vegetation and is shadowed in animal life, and then suppose that with the metamorphosis induced by the surrounding conditions the yellow fever cause is gradually evolved. These presumed changes, although, perhaps, involving many generations of germ life, may easily be accomplished within the period of a single season, and would be developed with a rapidity proportionate to the propitiousness of the situation. If such a modification has occurred once, it may occur a thousand times. This view is perfectly consonant with the essence of the germ theory, and at the same time it is not inconsistent with the facts as I believe they are found in practice."

That the virulence of some germs may be mitigated, and that some disease-causes may be so far controlled or domesticated, as it were, as to be used as allies for the repulse of their more savage kin, the brilliant discoveries and practice of Pasteur, in the case of splenic fever, have placed beyond doubt.

I offer, parenthetically, the suggestion that the recognized mildness of some diseases towards the close of an epidemic may be explained by Pasteur's discovery that the disease-cause is weakened, not intensified, as we might suppose, by passing through the bodies of the sick; that is to say, in so far as the disease is propagated from case to case each generation of poison is weaker than its predecessor, requiring less resistance on the patient's part to overcome it.

Now, reverting to what Pasteur has demonstrated, that some disease-germs may be changed in degree towards one end of the scale, that is in the direction of harmlessness, there appears no logical obstacle to the modification, under auspicious circumstances, of originally innocent germs in the other direction, that is, towards malignancy. This, there is reason to believe, Grawitz, of Berlin, has demonstrated; although it is proper to say that a very recent paper by Koch throws doubt upon his procedure. But Grawitz's experiments appear to have been conducted with scientific precaution and care, and to show that from an innocent fungus one deadly to animal life may be cultivated. Whether that is absolutely certain or not, I make this note to insist, inasmuch as Pasteur has proved their mutability as a class, upon the increased possibility of the natural cultivation, under a torrid sun in the alkaline decomposing feculence of sewers, cesspools, and wharf-heads, of those microphytes to which yellow fever may be due.

Very truly yours,

ALFRED A. WOODHULL,

BROOKLYN, February 17, 1882.

Major and Surgeon U. S. Army.

NEWS ITEMS.

KANSAS CITY.

(From our Special Correspondent.)

SPINA BIFIDA.—At the last meeting of the Jackson County Medical Society, an interesting case of hydro-rachitis was exhibited by Dr. Lyman Berger. The case is worthy of note from the fact that after having, in vain, pursued several of the recognized modes of treatment, an apparently untoward accident gave a very satisfactory cure.

The important points in this case are as follows: A child of undeformed German parents, now five months

old, was born with a cleft spine, and a tumor of about three-quarters of an inch in diameter, situated over the last lumbar vertebra. During the first five weeks subsequent to birth, the tumor rapidly increased in size, until it was somewhat over two inches in diameter, and the overlying skin became thin and translucent. At this time the child was put under treatment, and within the following six weeks five separate operations were from time to time performed, generally after the manner of the partial or nearly complete evacuation of the sac by aspiration and the injection of tincture of iodine, with the after-treatment of pressure by means of the cupped sponge, or, as was used after the last operation, of a small chamois skin covered hernia pad. None of these operations were successful, the sac refilling, more or less rapidly, after each one of them. Upon the day following the last operation, while the dressings were being removed preparatory to adjusting a smaller-sized ($\frac{3}{8}$ by $1\frac{1}{4}$ inch) hernia pad, the sac ruptured and completely emptied itself. The pad was quickly adjusted to the new pouch-like depression in the tumor, and held in place by adhesive strips, so that it was perfectly immovable. The sudden evacuation of the contents of the tumor brought about a condition of collapse, and no small amount of attention was required to keep the child alive; but after a time, however, the system rallied, and the parts seemed to accommodate themselves to the loss of the fluid. The only apparent impression left upon the brain by so great a loss of cerebro-spinal fluid being a depression in the anterior fontanel. For two days after the occurrence of the accident there was oozing of the spinal fluid from the point of rupture, but after this time none could be detected. At the expiration of a week the opening was found to be closed and to be healing by granulation, and the walls of the sac to be adherent. The tumor at this time had the appearance of a concave flattened disk, of from 2 to $2\frac{1}{2}$ inches in diameter, depressed in the centre, and lying flat upon the back. There existed a circular space of about an half inch in diameter at the centre of the pouch-like depression in the flattened tumor, which had a thickened, cutaneous covering, and beneath which could be distinctly felt the cerebro-spinal fluid. This circular space, at the time the case was reported, was seen to have been gradually growing smaller, and it was anticipated that eventually the space would be closed, or so filled in with thickened tissue as to give a very fair result.

VIENNA.

(From our Special Correspondent.)

HYPEREMESIS IN PREGNANCY.—Dr. Carl Ritter Braun von Fernwald was recently called in consultation to a distant part of Austrian-Hungary, to a lady of rank, suffering from hyperemesis in pregnancy. He found the patient in the fifth month of pregnancy, very much emaciated from the totally uncontrollable vomiting. The attending physician was urgent in advising the immediate induction of premature labor. Dr. Braun, however, did not approve the suggestion, but caused the vaginal portion of the cervix to be freely bathed in a ten-per-cent. solution of nitrate of silver in water. Five minutes later the vaginal portion of the cervix was well dried to prevent further corrosive action. The vomiting ceased at once, and one hour later the patient asked for a veal cutlet, which she ate with great relish and retained. There has been no recurrence of the vomiting. Dr. Braun is of the opinion that, in general, hyperemesis in pregnancy should not be regarded as an indication for the induction of premature labor, for the reason that he has frequently seen this operation result in death, while he has never seen a case of fatal hyperemesis occurring in a pregnant woman.

FOR HYSTERICAL CONVULSIONS during pregnancy, a very frequent and annoying occurrence among Viennese women, Dr. Braun uses, with great success, the following prescription:

| | |
|--------------------------|-------|
| R. Asafoetida, | 5. |
| Camphor, | 5 |
| Aqu. Font., | 200 |
| Vitelli Ovi., | No. 2 |
| D. S. For two clysters. | |

THE PUBLIC HEALTH.—For the week ending February 18, the deaths from small-pox, not before reported, were as follows: Chicago, 25; Pittsburg, 22; St. Louis, 9; New Orleans, 4; Omaha, Neb., 2; Richmond, Va., 5; and Brooklyn and San Francisco, each 1. Diphtheria caused in the same week 23 deaths in Brooklyn; 8 in Detroit; 7 in Chicago; 4 each in St. Louis and San Francisco; 3 in Buffalo; and 2 in Pittsburg. For the same period the deaths from typhoid fever were 12 in Chicago; 8 in Buffalo; 4 in San Francisco; 3 in Pittsburg; 2 each, in New Orleans, St. Louis, and Richmond, and 1 in Brooklyn. At the present time Vicksburg, Miss., is suffering from an epidemic of measles; chicken-pox is also said to be prevalent. There were 6 deaths from measles in Chicago. Scarlet fever is still very prevalent in Brooklyn, 30 deaths being reported in the week. Buffalo in the same week had from this cause 12 deaths; St. Louis, 7; San Francisco, 4; and Detroit, 3. With the exception just noted, neither measles, whooping-cough, nor cerebro-spinal meningitis are prevalent in any of the above-named places.

In the northern and western cities, and in San Francisco, pulmonary disease figures prominently in the weekly bills of mortality. Consumption was proportionately more fatal in New Orleans than in most of our large northern cities, and in San Francisco the mortality from this cause (16) was greater than from any other cause except pneumonia (25).

The mortality reports for the week ending February 25, so far as received, show a marked falling off in the number of deaths, from small-pox, particularly noticeable in Philadelphia, where the deaths decreased from 17 to 7. The numbers reported are as follows: Chicago, 35; Cincinnati, 25; New York, 12; Philadelphia, 7; Pittsburg, 11; Richmond, Va., 4; Memphis, 21; Boston, 1; and in Richmond, Va., 1 death from varioloid. At Pittsburg there were 60; at Milwaukee, 1; and at Richmond, Va., 21 new cases of small-pox and varioloid reported. From cerebro-spinal meningitis in Boston, Cincinnati, and Augusta, 1 death each; and in Philadelphia, Pittsburg, and Chicago, 2 each is the record of the week. Diphtheria is still very prevalent in Boston, 14 deaths being reported, the same number as occurred the preceding week. There were 12 deaths in Philadelphia; 9 in Chicago; 2 each in District of Columbia, Wheeling, Va., and Dayton, O.; and 1 each in Pittsburg, Richmond, Va., and Milwaukee. There are no reports of excessive mortality from scarlet fever. Philadelphia reports 7 deaths from this cause; Chicago, 7; Pittsburg, 5; Providence, R. I., 3; Milwaukee, 3; and Cincinnati and the District of Columbia, each 1. The deaths from typhoid fever are as follows: Philadelphia, 16; Pittsburg, 15; Chicago, 7; Boston, 5; District of Columbia, 4; Indianapolis, 3; Cincinnati, Wilmington, Del., and Louisville, each 2; and Providence, R. I., Richmond, Va., Wheeling, W. Va., Savannah, and Charleston, each 1. From seventeen prominent places throughout the country there are reported in the aggregate only 8 deaths from whooping-cough and 25 from croup, 8 of the latter occurring in Chicago.

HEALTH OF HUDSON CO., N. J.—Population for 1882 estimated at 394,402. Deaths for month of January, 558. The mortality for January has been exceptionally

great this year. Consumption heads the list with 75 deaths. The deaths from other prominent diseases were as follows: Pneumonia, 59; small-pox, 49; diphtheria, 35; bronchitis, 25; scarlet fever 26; croup, 22; malarial fever, 19, and typhoid fever, 12. It is a noticeable fact that nearly one-half of all the deaths were of children under five years of age. Diseases of the respiratory organs caused about one-third of the total mortality. Small-pox is charged with 8.78 per cent. of the whole number of deaths for the month.

HEALTH IN MICHIGAN.—The Bulletin of the State Board of Health for the week ending February 18, 1882, states that scarlet fever and tonsillitis have considerably increased, and that erysipelas, consumption, and neuralgia have considerably decreased in area of prevalence.

Diphtheria was reported present during the week ending February 18, and since, at twenty-one places; scarlet fever, at eighteen places; measles, at six places; and small-pox, at seven places in all, as follows: at Parkville, St. Joseph County (one case, convalescent), February 15; at Grand Rapids, Escanaba, and Detroit, February 18; at Stanton, Montcalm County (one case), February 20; at Spalding, Menominee County (nine cases, one new), February 21; among the Indians at Indiantown, near Spalding (eight cases), February 21, 1882, and twenty-two deaths to that date.

BIRTHS IN PARIS.—From the 20th to the 26th of January, 1882, there were 1353 births, distributed as follows: Males—legitimate, 491; illegitimate, 202; total, 693. Females—legitimate, 480; illegitimate, 180; total, 660.

During the same period there were 86 children born dead, or dying before registration. Of these there were 30 legitimate males, and 9 illegitimate; total, 39; and 32 legitimate females, and 15 illegitimate; total, 47.

THE GRAND PRIX LECAZE.—The Paris Academy of Sciences has conferred on Prof. BROWN-SEQUARD the distinguished honor of the Grand Prix Lecaze. This prize, which is of the value of 10,000 francs, is only given in recognition of a life-long devotion to physiological science which has resulted in important discoveries. The previous recipients have been Chauveau, Marey, and Dareste.

THE UNIVERSITY OF VIRGINIA.—A correspondent of the *New Orleans Medical and Surgical Journal* writes as follows of the University of Virginia: "Had our Southern neighbors no other boast, they might well be proud of that University.

"Let us see what per cent. of each class is graduated there. I have accurate data for two years only. In 1878-79 there were 53 men in the medical class; 48 of these applied for graduation, and 21 alone were successful. In 1879-80 there were 46 in the class; 31 applied and to only graduated. I had almost as soon be one of those 10 as a survivor of the 600 at Balaklava. Can we wonder at the small classes there? But the men of that faculty prefer a small class to a large one, where the pen which titles a fool tells a lie at every stroke."

NEW YORK NIGHT MEDICAL SERVICE.—Dr. William A. Ewing, Superintendent of the New York Night Medical Service, has submitted to the Board of Health a report of the operations of the bureau during the sixteen months of its existence, from September 1, 1880, when the act of Legislature was obtained, until January 1, 1882. It appears that in all, 573 calls have been made during the period above specified. These were distributed among 132 physicians out of the 450 whose names appear upon the roll. It is noticed as a curious fact that the tenth precinct, embracing a large tenement-

house district lying east of the Bowery, has afforded more calls upon the service than any quarter of corresponding area in the city. The majority of cases treated have been of a very urgent description, comprising, for illustration, 57 night attacks of croup, 28 of pneumonia, 10 of pleurisy, 55 of confinement, 2 of gunshot wounds, 11 fractures and dislocations, 15 suicides, and 3 of accidental poisoning. Of all the cases in which calls were made, only 19 were able to pay the fee specified by law, and in the remaining 554 the appropriation was called upon.

HYGIENE IN THE PUBLIC SCHOOLS OF PARIS.—According to a decree of the Minister of Public Instruction, a commission has been formed whose duties are to study the relations between the methods of instruction and the hygiene of the pupils, receiving authority to make whatever inspection and examination they may deem necessary, and to report their results to the Superior Council.

SANITARY CONVENTION AT GREENVILLE, MICHIGAN.—In accordance with invitation received from citizens of Greenville, arrangements have been made by a local committee of citizens acting with a committee of the State Board of Health, to hold a Sanitary Convention in the city of Greenville, Michigan, on Tuesday and Wednesday, April 11 and 12, 1882. At each session of the convention there will be addresses or papers on subjects of general interest pertaining to public health, each paper to be followed by a discussion of the subject treated.

The officers chosen are as follows: President, Rev. J. L. Patton, of Greenville; Vice-Presidents, Hon. E. H. Stanton, of Ionia; Rev. A. A. Brown, of Greenville; Hon. H. H. Hinds, of Stanton; Charles P. Bigelow, M.D., of Big Rapids; Hon. J. P. Shoemaker, of Amsden, and Hon. R. C. Miller, of Greenville; Secretary, Charles S. Sheldon, M.D., of Greenville.

Manufacturers of sanitary apparatus or appliances, and dealers in the same, or in any article conducive to health, are invited to send samples of their wares for exhibition at this convention. Judges will be appointed to examine the various articles on exhibition, and certificates of merit will be awarded to such articles as are deemed worthy.

Among the subjects which it is desired to have presented and discussed are the following:

1. The Prevention and Restriction of Small-pox, Diphtheria, and Scarlet Fever.
2. The Present and Prospective Water-supply of Greenville.
3. The Disposal of Decomposing Organic Matter.
4. Pure Air; Why we should have it, and How we shall get it.
5. School Hygiene.
6. The Relation of the Newspaper Press to Sanitary Reform.

SPREADING OF YELLOW FEVER BY RAILROAD CARS.

—In order to prevent the spread of yellow fever by means of railroad cars, etc., the Pullman Southern Car Company adopted the following precautions during the late epidemic, as shown in the Report of their Superintendent to the Illinois State Board of Health, from which the following extract is made:

All our cars were thoroughly disinfected at *every terminus of our lines*, and pure carbolic acid was exposed in open vessels in every car while *en route*. At terminal points every car was thoroughly cleaned—all bedding, seats, carpets, and, in fact, everything movable in the car, were taken out, whipped, brushed, and then fumigated in a close room with sulphur. Each car was scrubbed inside and out, and then closed and

fumigated with sulphur. After this process with car and equipments, they were both exposed to the open air for several hours, carefully dusted, and both car and equipments liberally sprinkled with carbolic acid. Carbolic acid was put in each spittoon on every car running into or through any infected district five or six times during each day or night. All cars were thoroughly ventilated while *en route*, by open doors, windows, and deck sash.

As soon as the disease was declared epidemic in New Orleans, Memphis, and other points, our cars were withdrawn, as in the case of the lines from New Orleans to Chicago and St. Louis, from Louisville to Memphis and Little Rock, and from Cincinnati to New Orleans, *via* Montgomery. We had one line of sleepers only that continued unbroken during the entire epidemic—the line from New Orleans to Cincinnati *via* Milan. On this line all cars were treated at each terminal point and *en route* as above indicated.

During the entire course of the epidemic we did not have a single case reported to us of yellow fever occurring from any *supposed* infection from our cars; and in every instance when any person coming from any infected district was taken sick on one of our cars, *not only the person, but the mattress, pillows, blankets, and sheets as well, were removed at the first station, and all bedding and material thus removed was invariably destroyed—in no instance was any portion of it ever returned to a car.*

We do not know of a single case, *nor do we believe one can be found*, of yellow fever developing itself on any of our cars, *except in persons coming north from infected districts*, and in whose system, beyond a doubt, the germs of the disease were implanted before they undertook the journey. In every case of this kind (and they were very few), the persons, and everything movable in the car, with which they had come in contact, were removed from the car as above described.—*Chicago Med. Journ. and Exam.*, Nov., 1881.

THE REGISTRATION OF CLINICAL THERMOMETERS.—We have recently received the first Annual Report of Leonard Waldo, the astronomer in charge of the Horological and Thermometric Bureaus of the Winchester Observatory of Yale College, and have found it of so much interest and importance to physicians that we desire to call especial attention to it.

Many do not know the fact that in our own country they can have their thermometers tested; and quite as many, perhaps, are not aware of the pressing importance there is for such a test. Yet Mr. Waldo states that fifty of the thermometers tested during the year had errors of over $1\frac{1}{2}^{\circ}$; and he states, and we believe from some experience he is right, that "there is little doubt that the great majority of physicians' thermometers now in use in the United States are from $1\frac{1}{2}^{\circ}$ to 2° too high in their indications!" Especially will such errors be marked in newly-made instruments, and the Observatory offers to seal up any ungraduated instrument sent to them, and after a year to return them to the instrument makers, with a certificate. They can afterwards be graduated, and then tested and certified as to their accuracy before being sold.

We are glad to see that during the year as many as 1667 thermometers for clinical and physiological use were tested—a very favorable showing as compared with the Kew Observatory (England) numbers, which were 1439 in 1875, and 3405 in 1879.

The regulations are very simple. The thermometer, which should be numbered, or otherwise designated, must be carefully packed and forwarded to the Observatory by express or by mail, prepaid, of course, and with fifty cents, the very moderate charge for such careful testing. After about three days they are returned with

a numbered certificate giving the error in tenths of a degree for each 5° of the scale. Hospitals or individuals can make arrangement for systematic examinations at stated intervals of all their instruments, a necessary precaution to ensure continued accuracy. In fact, the Observatory, as in fine watches, so in thermometers, is striving not only to give us the exact errors of our instruments, but by a proper stimulus to the makers of both to foster the production of better instruments. How needful that is we have already stated, and an error of 1° , or even of 2° , is so probable in unregistered instruments as to throw discredit on all such. We feel bound, therefore, to urge our readers to buy only those that have been registered, and that are reasonably free from error, say with a maximum error of $\frac{1}{10}^{\circ}$; and if they have already bought such uncertified instruments to forward them at once for test and certificates. How successful, also, the stimulus has been even a year shows; for while in June, 1880, four-fifths of all thermometers received from seven makers were in error over $\frac{1}{2}^{\circ}$, and two per cent. of over 1° , in April and May, 1881, four-fifths of all thermometers sent had errors less than $\frac{1}{10}^{\circ}$. The standard of comparison used is within about 0.03° centigrade of perfection.

MEDICAL SCHOOL OF GLASGOW.—The class lists for the present session show that the number of students enrolled in the several medical schools is 863. Of these, 63 are attending science lectures, without the intention of entering the medical profession, leaving 800 *bona fide* students of medicine in Glasgow.

THE IMPORTANCE OF THE COCCYX IN THE ARAB ANATOMY.—Some curious facts are to be found in Bertherand's work on *Medicine in Algiers* as to the importance attached by the Arabs to the coccyx in relation to the future state. They designated this bone *Adeum tehoutehou*, the first word meaning bone, the second, a phonetic imitation of the sounds produced by the intestinal gases passing the anus. Mohammed has said that all the bones of the body are consumed in the ground, with the exception of one, the coccyx; and that this bone, the first created by the Deity for the construction of each skeleton, is the only one which resists all the causes of destruction, in order to serve at the judgment day for the rebuilding of each body. The rain of forty days, which will precede this great day, will fertilize all the coccyges, as osseous germs destined to reproduce all the other parts of the body in the same way as the seed which contains within it all the elements of the plant to which it will give birth.—*L'Union Méd.*, Jan. 21, 1882.

GUY'S HOSPITAL.—The managers of the nursing system, so strenuously upheld by the governing body of Guy's Hospital, are at least unfortunate beyond all precedent. The last nursing misadventure, resulting in the death of one of the patients in Guy's Hospital, appears to have arisen immediately from the disregard, by the ward-sister, of one of the ordinary rules in the management of the wards, namely, keeping all the poisons in the poison-cupboard. In each ward, there is a poison-cupboard, where all poisons are kept. In the present instance, the sister had neglected this necessary measure of safety, and left a basket on the table, in the middle of the ward, containing four packets, each of ten grains of morphia. A night-nurse came on duty in the evening, was told nothing of the powders by the sister, and mistook them for quinine powders. Why were the powders, of forty grains of morphia, enough to kill forty people, not placed in the poison-cupboard? For this, the ward-sister is, we presume, responsible. The nurse who gave the powders is responsible, in a less degree, for not having noticed

the poison-card lying among them. The dispenser would also have acted, to say the least of it, with more discretion, had he labelled each powder, sufficient as it was to destroy ten people, with a poison label. We cannot, however, approve the practice, which was going on, of allowing the ward-sister to prepare the solutions of such large doses of poison. Where it is necessary to employ poisons in such quantities, special precautions should be used. In the unfortunate case in question, the reverse seems to have taken place.—*British Med. Journ.*, Jan. 14, 1882.

PRISMATIC MIRROR FOR RHINOSCOPIC EXAMINATION.—At the meeting of the Société de Biologie on the 8th of December, M. GELLÉ presented a prismatic mirror for rhinoscopic examination, which has the advantage of presenting the image in the true proportions, and not distorted, as in the plane mirror. It is also extremely easy to introduce and gives a very distinct and well-defined image.—*Revue Mens. de Laryngologie, D'Otologie et de Rhinologie*, Jan. 1, 1882.

CLAUDE BERNARD.—The Municipal Council of Villefranche (Rhône) decided at their last meeting to erect a statue to the memory of Claude Bernard, in the place which already bears his name.

PERSONAL.—The dignity of State Chancellor has been conferred by the Emperor of Austria on Dr. Alexander Rollet, Professor of Physiology in the University of Graz, in recognition of his long services in the cause of science.

OBITUARY.

ROBERT BRIDGES, M.D., Emeritus Professor of Chemistry in the Philadelphia College of Pharmacy, and one of its trustees, died at his residence in this city, February 20, 1882, near the close of his seventy-sixth year. He was born in Philadelphia, March 5, 1806.

His general education was concluded at Dickinson College, Carlisle, Pa., and he was graduated from the Medical Department of the University of Pennsylvania, March, 1828.

During many years he was the assistant of the Professor of Chemistry, Dr. Franklin Bache, in the Philadelphia College of Pharmacy, and succeeded him in the chair in 1842. His last course of instruction was delivered in 1879, when failing health induced him to retire, after thirty-seven years' faithful and efficient service.

After the death of Dr. Franklin Bache in 1864, he took his place in editing Wood and Bache's *Dispensatory*. He was assistant editor of, and contributor to, the *American Journal of Pharmacy*, and edited the reprints of Graham's *Chemistry*, Fowne's *Chemistry*, and Atfield's *General Medical and Pharmaceutical Chemistry*. He was a member of the Committee of Revision and Publication of the *Pharmacopœia of the United States*, in 1860 and 1870; a councillor of the American Philosophical Society; and a member of the Academy of Natural Sciences, of Philadelphia, from January, 1835. He was a Vice-President of the Society during fourteen years, and President for the year 1865, and declined re-election. He served the Academy as Librarian, as Corresponding Secretary, and as a member of its Publication Committee during twenty-four years.

He was elected a Fellow of the College of Physicians of Philadelphia, July, 1842, and held the office of Librarian during several years.

His learning was extensive, accurate, and varied, and among naturalists and medical men he was well known by reputation throughout the country. He was remarkably modest, unobtrusive; but never failed to win the

kind and respectful consideration of all who became acquainted with him. His conduct throughout life was characterized by good sense, benevolence, and rigid probity under all circumstances. His firm yet quiet ways shed a salutary influence on the prosperity of the several institutions in which he was interested. His services to the Philadelphia College of Pharmacy and to the Academy of Natural Sciences, of Philadelphia, must be long remembered.

NOTES AND QUERIES.

A REFERENCE IN CICERO TO DISSECTION.

To the Editor of THE MEDICAL NEWS.

SIR: Few actual statements are made by ancient authors, even by the medical writers, as to the prevalence of dissection. Here and there an allusion to the custom is met with, which by the very indirectness of statement become the stronger proof that dissection was practised to a greater or less extent. Hence, we feel that no apology is needed for quoting the following passage from Cicero's *Tusculan Disputations*, Bk. I., Ch. XX., to which our attention was recently directed by Mr. W. E. Foster, the accomplished librarian of the Providence Public Library.

Speaking of our bodily senses, he says, "Neque enim est ullus sensus in corpore, sed ut non physici solum docent verum etiam medici qui ista aperta et patefacta viderunt, viæ quasi quedam sunt ad oculos ad aures ad nares a sede animi perforatæ," or translating it somewhat freely, "Nor is there any perception in the body itself, but, as not only naturalists teach us, but also doctors who see these things uncovered and laid open, there are, as it were, ways made (perforated) from the seat of the soul to the eyes, the ears, and the nose."

Cannot some of our scholarly readers furnish us with other similar allusions?

I am, sir, yours faithfully,

WILLIAM W. KEEN, M.D.

PHILADELPHIA, March 1, 1882.

CONVERSATION IN A DOCTOR'S OFFICE.

Miserable Old Woman.—"My daughter is married to Barney McMunns, and he gives her bad treatment, and abuse, and hardship—"

"And McMunns, he likes her?" puts in the doctor.

"Yes, and indeed he does," the old woman mutters.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 21, TO FEBRUARY 27, 1882.

POPE, B. F., *Captain and Assistant Surgeon*.—Relieved from duty in Department of Dakota and to report in person to the Surgeon-General for duty in his office.—*S. O. 42, A. G. O., February 21, 1882.*

MOFFATT, PETER, *Captain and Assistant Surgeon*.—Relieved from duty at Camp Spokane, Washington Territory, to proceed to Fort Coeur d'Alene, Idaho, and relieve Assistant Surgeon Spencer from duty at that post.—*S. O. 20, Department of the Columbia, February 11, 1882.*

FINLEY, J. A., *Captain and Assistant Surgeon*.—Fort Adams, Rhode Island. Granted leave of absence for one month.—*S. O. 29, Department of the East, February 20, 1882.*

SPENCER, WM. G., *Captain and Assistant Surgeon*.—Granted leave of absence for one month, with permission to apply for an extension of one month to Division Headquarters, and for an extension of four months to the Adjutant-General of the Army.—*S. O. 19, Department of the Columbia, February 10, 1882.*

RAYMOND, H. I., *First Lieutenant and Assistant Surgeon*.—Relieved from duty at the Presidio of San Francisco and assigned to duty at Alcatraz Island, California.—*S. O. 28, Military Division of the Pacific and Department of California, February 15, 1882.*

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.